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ABSTRACT

The data collected in a 1978-79 study of 742 students enrolled in cooperative education (co-op) programs in forty-seven participating colleges and universities describes by sex what students in various fields of study do on their job, what they perceive their work conditions and responsibilities to be, how they view their abilities, and how their performance is rated by their employers. Students were divided into three groups according to the traditionality of their majors: female dominated (FD), neutral (NT), or male dominated (MD). Student logs, rating sheets, and a supervisor questionnaire/rating sheet were used to collect the data. Results indicate that working environment, conditions, events, and encounters are sex linked, as are the kind and amounts of personal and social interaction a student experiences on the job along with some attitudes and perceptions. Students majoring in fields where their sex is opposite to that of the dominant group resemble in many ways the members of the dominant group rather than others of their own sex. Supervisors generally agreed with students' self ratings; women's performance on the job was generally rated as superior to that of men. It was concluded that the first co-op experience is significant since it establishes and reinforces behavior patterns toward work and influences career development. (Study instruments and lists of participating institutions are appended.) (MED)

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# SEX DIFFERENCES IN COOPERATIVE EDUCATION:

## A STUDY OF FIRST-TIME COOPERATIVE EDUCATION STUDENTS IN TRADITIONAL AND NON-TRADITIONAL OCCUPATIONS

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# Sex Differences in Cooperative Education: A Study of First-Time Cooperative Education Students in Traditional and Non-Traditional Occupations

Heller, B.R., L. Gross, R. Senf

## ERRATA

| Page | |
|---|---|
| vii | Table 22 title should read "...of Students Spoken to By Supervisor..." Also, Table title on p. 104. |
| 4 + 5 | Pagination reversed (i.e., p. "5" should be read before p. "4".) |
| 75 | Line 13 should read "...Table 17 on pages 71 and 72..." |
| 83 | Last 2 items (Table 18) are from SET C |
| 87 | Last 2 items (Table 19) are from SET C |
| 102 | Line 8 should read "...Table 22, on page 104..." |
| 102 | Lines 25-26 should read "... x 2 sexes), only 15 percent involved more than 10 percent of the students." |
| 109 | Line 8 of footnote should read "...(3 x 100%, + 2 x 0%, + 1 x 0%) ÷ 3 = 100." |
| 127 | Line 6 should read "...attempts to curry favor; ...." |

## FOREWORD

The educational values of cooperative education internships have been treated in the literature in various way. Proponents have cited the reinforcement of classroom learnings in the workplace, the enrichment of classroom activity through the bringing of work experience into the curriculum, the opportunity to sample the field of work prior to completion of study and commitment to a career choice, and the potential for employment at the work site. Antagonists have questioned the depth and breadth of experience gained, have surmised an atmosphere of exploitation of the student, and have generally challenged assumptions surrounding the contribution of such experiences to the future of the participants.

While truth probably lies somewhere between the two positions, nowhere in the literature was there evidence of the differences of experiences of the sexes as they entered upon cooperative education. If there was, in fact, sex stereotyping in the workplace, the experiences of the students would have this additional overlayment. Accordingly, the study reported herein describes the experiences of almost one thousand students, from forty-seven colleges and universities, engaged in first-time cooperative education experiences. The nature, extent, and direction of sex differences in these initial placements should provide the necessary information base for guidance and other programmatic activities designed to reduce or eliminate sex stereotyping in the workplace.

Lee Cohen, Ph.D.
Director, IRDOE

ACKNOWLEDGMENTS

Whatever merit this report possesses will not be enhanced by what is said in the Acknowledgments. Regardless of how our efforts are perceived, this study represents the combined hard work of a great many people whose contributions deserve recognition.

First, I would like to thank the deans and directors of cooperative education programs at the 47 participating colleges and universities. Too numerous to note here, the many people and institutions that made this project possible are listed in Appendix A. Similarly, while we cannot name and thank individually the students and employers who filled out our forms and answered our questions, we acknowledge with gratitude our indebtedness of each of them.

The Cooperative Education Branch, USOE, funded this study. In addition to their sponsorship, however, the personal interest of Dr. John L. Chase and Mr. Lee M. Frederick was very important to us.

Dr. James W. Wilson, Director of Research, Northeastern University Center for Cooperative Education, and Dr. Harry N. Heinemann, Dean of Cooperative Education, LaGuardia Community College of the City University of New York, continued to provide us with the advice and friendship that we have come to rely on. They helped immeasurably during those difficult times when we were surrounded by dreams and reams of printout and tangles of tape; thank you for being there when we needed you.

The work done by Ms. Arlene Vogl and SuiKwan Cheng deserves special note. We are proud of the way Ms. Vogl supervised all the clerical and administrative details involved in keeping records, overseeing the mailings, coding the returns, and preparing tables – and the final document for publication; she contributed in other, more substantive ways as well, and we value her involvement. In many of these matters Ms. Vogl was ably assisted by Katherine Antonacci, Patricia Bicks, Ronna Kabatznick, and Katherin McKearn. Ms. Cheng, a recent employee, also helped, and had she been part of the staff earlier many of my nightmares would have been easier.

Mr. Fred J. Wheeler was responsible for all computer operations, and Ms. Carolyn Weber typed the earlier drafts of the instruments, forms, and labels. She was helped by Ms. Rebecca Hayes, under the supervision of Ms. Melanie Bentley, IRDOE's administrative assistant.

This document was prepared in final form by Ms. Ruth Román-Marrero who not only struggled through drafts and bad penmanship, but also with our changes of mind. By the final draft Ms. Marrero could recite parts of the text by heart, without loosing her cool. Ms. Maxine Smith not only helped with the typing, but took care of a great many of the administrative details -- thereby enabling the the rest of us to fulfill other obligations.

Looking back now that the IBM cards are neatly stacked, the printouts labeled, the questionnaires filed, and the report printed, I can see many shortcuts we could have taken, many procedures that could have been corrected, many things we left unsaid, and other things we said poorly. None of these are the final responsibility of any person other than me.

Barbara R. Heller
Project Director

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# SEX DIFFERENCES IN COOPERATIVE EDUCATION: A STUDY OF FIRST-TIME COOPERATIVE EDUCATION STUDENTS IN TRADITIONAL AND NONTRADITIONAL OCCUPATIONS

## INTRODUCTION

This report describes a study conducted in 1978-1979 with a grant from the U.S. Office of Education, Cooperative Education Branch,[1] to examine sex differences in students' first cooperative education (co-op) work experience, and to discover how these differences relate to the sex-traditional nature of various fields of work and study. This research builds on an investigation conducted by two of the present authors in 1977-1978, also funded by USOE.[2]

A total of 47 colleges and universities participated in the study described in this report. In all, 742 students from these institutions served as subjects. The data collected describes what female and male students in various traditional and nontraditional fields of study do on their first co-op job, what they perceive their work conditions and responsibilities to be, how they view their abilities, and how their performance is rated by their employers.

### Background

Cooperative education provides many students with their first adult employment experience--one that is intended to give them a realistic picture of the world of work and their place in it. As such, the co-op employment has the potential for critically affecting career choice and satisfaction while also shaping students' future work

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[1] USOE Project #510AH80357.

[2] Heller, B.R. and L. Gross. Sex Differences in Cooperative Education: A Study of Sex Stereotyping as Related to Selected Institutional, Employer, and Cooperative Education Program Characteristics. City University of New York, CASE Report No. 25-78, September 1978. (USOE Project #510AH70042.)

patterns. It is not uncommon, as Wilson found in a recent study,[1] that co-op students attribute their career development more to the work experience than to faculty contact or courses.

Valuable work has been done in examining the impact of cooperative education as it relates to certain career development variables. This work makes it possible to describe some differences between students who have and have not had co-op experience, as well as some differential effects on various subgroups of co-op students. For example, Brown[2] demonstrated that, in general, alumni of co-op programs felt more adequately informed about career options than their nonco-op counterparts, and felt better prepared for the work they entered after college. Furthermore, co-op graduates of certain curricula reported particular benefits in terms of such things as increased satisfaction, opportunities for advancement, and amount of responsibility on the job.

Thus far, however, relatively little attention has been paid to detailing what students experience on a co-op work assignment, and to discovering more specifically how their work abilities and their perceptions of themselves as workers develop. Only general information is available about what students do on the job on a daily basis, how and by whom they are supervised, how they feel about their duties and capabilities, and how students are incorporated--both by function and through interpersonal relationships--into the ongoing routine of their place of employment.

It is the particular interest of this study to describe the activities and perceptions of co-op students on their first work assignment, and also to compare the experiences of men and women. On the basis of observation alone we know that there are differences between workers of each sex in the world at large in such areas as

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[1]Wilson, J.W. Impact of Cooperative Education Upon Personal Development and Growth of Values. Northeastern University, July 1974.

[2]Brown, S.J. Cooperative Education and Career Development: A Comparative Study of Alumni. The Cooperative Education Research Center, Northeastern University, 1976.

duties performed, amount of authority and responsibility, and paths to and rapidity of advancement. Our interest is to examine, using the first co-op work placement, the degree to which an initial adult work experience reflects, and thus perhaps inadvertently reinforces, differences in the ways in which men and women perform and are treated at work.

Our 1977-78 pilot study began to examine the effects of sex on the cooperative work experience; we surveyed 272 students from four colleges who were on their first co-op work placement. The students described a typical day at work by reporting the activities they performed, locations where they worked, and with whom they interacted. Students were also asked for their impressions about how they were treated and about their abilities. Work supervisors rated the students' performance on the job, and also their personal characteristics.

The findings of the 1977-78 study indicated that there were indeed differences in work activities, environments, and perceptions that related to sex:

- Certain activities were more frequently performed by students of one sex, and most of these activities followed traditional sex-stereotypical patterns (e.g., the female students did more typing; the male students did more lifting).

- During a working day, the men were more mobile than the women--they tended to be in more types of places and to interact with a greater variety of people.

- Men tended to work longer hours and work more overtime (without compensation) than women.

- Men tended to perform more activities of a personal nature during working hours, and were more likely to feel that whatever they did during the day was appropriate to their job title.

that for most students the co-op job tends to be related to their major, which in turn tends to reflect the students' career interests. The results provide considerable support for these assumptions.

The Research Problem

The research design allows us to again address the general question of the differences female and male students experience on their first co-op work assignment and to answer two related questions: Do male/female differences vary as a function of curriculum or major; and do these differences obtain when we compare women and men in fields of study that are nontraditional for one or the other of the sexes?

For each of these questions, this study compares male and female students in terms of:

- The nature, duration, and location of activities performed at work;
- Interpersonal relations with co-workers and supervisors;
- Working conditions, facilities, and compliance with regulations;
- Self-perceptions about their work capabilities and the appropriateness of their duties;
- Reactions to the co-op work experience, and their future expectations; and
- Supervisors' ratings of students' work abilities and personal qualities.

For every measure, we compared all male and all female respondents; then we divided the respondents by major and formed groups of women and men majoring in traditionally-female, traditionally-male, and neutral fields (i.e., fields in which approximately equal numbers of females

- Men were more confident of their ability to perform a greater number of activities than women, although supervisors rated the women as more capable than the men in performing more types of activities.

In that pilot study, the sample of students was limited to those attending institutions in the Northeast part of the country. This geographic restriction made it difficult to obtain a large enough number of students to make several important comparisons. For this reason the study compared all men and all women on their first co-op work assignment, and only began to examine female/male differences as they related to other attributes.

One interesting question that arose was whether the differences we found between the male and female students would be consistent over all fields of work and study. It appeared, for example, that women in the Engineering curricula displayed much more confidence in their work abilities than did the women in other fields, although the sample size was too small to permit definite conclusions. In this second study, which was not limited geographically, our intent is to examine the work experiences as a function of students' chosen career areas, and to compare male/female differences for groups of students in fields which are predominantly male (such as engineering), predominantly female (such as nursing and education), and relatively equal in terms of male and female participants (such as social sciences).

In planning this study, we had hoped to compare groups of female and male students with similar first co-op job titles. While this would have provided optimally matched groups, it proved to be impossible to interpret students' reported job titles with exactitude or to discern which titles were indeed similar.[1] Instead, the study compares groups of men and women in similar curricular areas, making the assumption

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[1] Many reported job titles were not specific as to either the field in which the students were employed or their level of responsibility (e.g., "environmental intern," "volunteer for research lab," "software design," and "plant layout"). From other titles, we could discern the field of employment but were still uncertain about the specific duties (e.g., "help engineers," "environmental educator," "office helper," "mailroom employee," "live with handicapped adults," "accounts payable").

An illustrative problem was whether the student who indicated a job title of "English tudor" should be classified with educators or architects.

and males enroll). Students in the traditionally male curricula were further partitioned into those majoring in engineering and in business-related subjects. Thus our two main classification variables are sex and "traditionality" of students' majors. A more complete description and definition of traditionality is given in Methods and Procedures, "Curriculum and Traditionality."

## METHODS AND PROCEDURES

### Identification and Selection of Sites

The criteria used for identifying institutions for the study were, first, four-year college or university status, and second, a stable cooperative education program of substantial size. The size qualification was defined as 200 or more students enrolled in co-op during a given year, and/or at least 30 co-op students in the Engineering, Business, Liberal Arts and Sciences, or Nursing curricula.

Names of colleges that appeared to meet these criteria were obtained from a cooperative education directory[1] and from other informal sources. We contacted 138 four-year colleges in the fall of 1978, explaining the study briefly and asking them to participate. A total of 47 suitable institutions accepted and participated in the study. These colleges are located throughout the United States, differ with respect to institutional and programmatic characteristics, and vary in total enrollment and co-op offerings and enrollment.[2] In spite of our initial "substantial size" criterion, some of these 47 colleges had only a few co-op students.

Reasons for nonparticipation were diverse: many colleges did not respond after repeated efforts at contact; some others did not have

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[1] Cooperative Education Association, A Directory of Cooperative Education, Volume V, Drexel University, Philadelphia, Pa., 1977.

[2] Appendix A contains a list of the 47 colleges and universities and the co-op deans/directors or their representatives with whom we worked.

appropriate cooperative education programs, and a few declined to participate for other reasons. Several colleges said they currently had no co-op program, a very atypical one, or were being reorganized; one college said they had too few females. Two otherwise suitable colleges' co-op placements did not occur at the time of our data collection activity.

Our original intent for this study was to include a sizable number of male and female nursing students, as representing a stereotypically female occupational area. But only one of the participating colleges reported offering co-op to nursing students, and an effort to find additional four-year colleges with co-op nursing produced none. Since we had very few male subjects in the traditionally female areas, as a final effort we approached 8 two-year colleges listed as having nursing co-op; however, all these schools indicated that, while their nursing students had an internship, the program could not be defined as true co-op under Title VIII.

Student Selection

Each of the 47 participating colleges was asked to provide a list of names and best mailing addresses for students taking their first co-op assignment in the winter and/or spring quarter(s) or spring semester of 1979. In most cases, we contacted all students on these lists. The only exceptions occurred when two colleges were unable to release students' names,[1] or when the list of students provided by the college indicated that certain curricula (such as Engineering) were heavily composed of same-sex students. In the latter instance, we contacted all students of the underrepresented sex, along with a sample of the other-sex students, usually in a 3 or 4 to 1 ratio.

---

[1] In the case of these two colleges, we assembled the initial student mailing and sent it to the schools, who distributed it to students individually. For these colleges we do not have an accurate count of the number of students contacted.

The first direct contact we had with students was by mail and consisted of a letter from us describing the study and explaining what the student would be asked to do; a letter from the cooperative education dean or director at the student's college, indicating that the institution knew about the study; and an Agreement Form, which asked the students for some general information about their co-op assignment and major, and whether or not they would serve as subjects. As with all mailings, a prepaid return envelop was included. The mailing was sent to students from the different colleges at different times depending on the dates of their academic periods, and on when we received their names and addresses. This initial mailing was sent out between December 1978 and March 1979, generally reaching students during the first or second week of their winter or spring co-op period.

The estimated median number of students contacted from individual colleges was 24 (mean, 64), with a range from 2 to 878.[1] A total of 1098 students replied; 962 agreed to participate, of whom 867 (from 45 of the colleges) were eligible for inclusion. Others either would not be on their first co-op job, or their first co-op placement would occur after our data collection period. Students who declined to participate either did not then have a co-op job, had a job that was classified or that kept them too busy, had an atypical job--or did not offer an explanation. The final sample for analysis included 742 different students for whom at least one instrument was returned; of these, the median was 8 per college, with a range between 1 and 73,

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[1]Many students never received our mail, which was returned as undeliverable--even though we had requested the "best mailing address." Obtaining correct and current addresses in research like this presents a serious obstacle to securing larger numbers of subjects. It is our experience that co-op students, who often move from the college to another location for their job, may also move while on the job, in an effort to find suitable temporary housing. It is also common for the best address to be the student's home, which requires parents or guardians to forward the mail.

plus an atypically large 159 students from one college.[1] Results from all colleges were pooled; no data will be examined for individual colleges or students, although we know that the academic component of their co-op programs differed in many ways. We assume, however, that there is enough commonality in work assignments among colleges to justify such pooling.

Instruments

The three data collection instruments, in order of administration, were the Student Co-op Log, Student Questionnaire, and Supervisor's Evaluation.[2] The Log and Questionnaire were to be filled out by the student; the Supervisor's form was to be completed by the student's immediate supervisor at work. All the instruments were designed to facilitate quick completion, and required few or no written-in responses.

The Log provides a detailed description of a student's typical day at work ("Log Day"). It is based on the instrument used in the 1977-78 study, but we expanded it substantially, with the aim of increasing clarity and simplifying interpretation. The Log contains a list of locations, persons, and activities, chosen to encompass the diversity of locations where one may be at work, the range of people of differing functions and levels of responsibility with whom one might interact, and the variety of tasks that may be performed. The effort was to make the items generic--applicable to workers in all types of jobs--rather than specific to a particular job title. For example, "working a cash register" was subsumed under "operating equipment other than a typewriter."

The students were asked to select one fairly typical day at work as Log Day ("within the next few days" after receipt of the instrument)

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[1] In addition, at least 15 instruments from an additional 12 students were received too late for inclusion in the analyses, after our cutoff date of July 2, 1979; in fact the most recent arrived in October 1979.

[2] For copies of these instruments, see Appendix B.

and to complete the Log as soon as possible after work on that day. They were instructed to rate, on a five-point scale, how much time they spent at each location, with each type of person, and performing each activity. Then the students checked the places where rest or social breaks were taken, types of persons with whom they interacted socially, and their perceptions of the appropriateness of each activity to their own job. Since Log Day was rated a very or fairly typical day by almost all respondents (98%), all Logs received were used in the data analyses.

The Questionnaire was also modified and expanded from the instrument used previously. It provides several types of information: first, a uniform, systematic description of the employing organization and the students' assessments of the work situation--the hours, supervision, duties, and working environment; second, their perceptions of work rules and regulations, and of their ability to perform a list of activities (for most of which they had indicated on the Log how much time they spent on each); third, their views on how they were treated by, and as compared with, co-workers and supervisors; fourth, their personal qualities as these related to the job; and fifth, their general career attitudes.

The Supervisor's Evaluation contained two lists--one of work activities and one of personal qualities; both lists were essentially the same as those on the student instruments. We asked supervisors to indicate which activities the student performed on the job and how well, compared with the average worker in the same capacity; also, the degree to which each personal quality characterized the student, and whether these qualities were an asset or a liability to the job.

Before distributing each set of instruments, we coded them with a unique student identification number, which included their school code number. Thus it was not necessary for names of students or supervisors to appear on the instrument; besides protecting the student's privacy and preserving anonymity, code numbers let us know which of the returned instruments pertained to the same student.

As was the case for the initial explanatory mailing, dates for administering instruments varied by college, depending on the dates of work periods; they were mailed between January and May 1979. The Log, sent approximately three weeks after the initial contact mailing, went to all students who had agreed to participate, and also to those who had not (yet) responded to the first letter. The Questionnaire, mailed three to four weeks after the Log, was sent to all students who had by then agreed to participate. The envelope containing the Questionnaire also included the Supervisor's Evaluation form, which we asked the student to give to his/her supervisor, together with two letters of explanation--one from us and one from the student's college.

The Study Sample

Table 1 shows by sex the number (Ns) of Logs, Questionnaires, and

TABLE 1

THE STUDY SAMPLE: STUDENTS FOR WHOM INSTRUMENTS WERE RECEIVED, SHOWN BY SEX

| INSTRUMENT | No. of Students | | | Percent Male |
|---|---|---|---|---|
| | Total | Male | Female | |
| Student Log | 710 | 405 | 305 | 57% |
| Student Questionnaire | 539 | 306 | 233 | 57% |
| Supervisor's Evaluation | 427 | 242 | 185 | 57% |
| No. of different students for whom at least one instrument was received | 742 | 425 | 317 | 57% |
| No. of students for whom all three instruments were received | 383 | 218 | 165 | 57% |

NOTE: In addition to the above, at least 15 instruments for 12 different students were received too late for inclusion in the analyses.

Supervisor's Evaluations received for the 742 students in the sample. The percentage of completed instruments was highest for the Log (96%), next highest for the Questionnaire (73%), and least for the Supervisor's forms (58%). The lower response rate for the Questionnaire may be attributable to a combination of factors: the students had already spent some time completing the Log, and lost some of their original enthusiasm; the Questionnaire was rather long (8 pages)--even though it was fairly quick to complete; the activities section may have looked to the students, from a hasty glance, as if it was repetitive of the Log; and students may have moved again before the instrument reached them. The relatively low rate of return of the Supervisor's Evaluation is no surprise. Since students were asked to hand this form to their supervisor, it seems likely that some of the forms did not reach them, considering that in at least a few instances we know that this mailing was probably received at the very end of the co-op work period. Moreover, supervisors have many other responsibilities, often making it difficult for them to fill out the ratings of co-op students that most colleges require.

The bottom row in Table 1 shows the students for whom we received all three instruments--a total of 383, or 52 percent of the total sample. We had considered analyzing only the data from this group, since that would eliminate differences attributable to having different sets of students represented by each of three instruments. But such a decision would have reduced the sample size greatly, making it very difficult to compare female/male differences as a function of other variables, such as curriculum and traditionality. Further, we found that the students represented by the respondents to each of the three instruments (the 710, 539, and 427) were highly similar in many ways when the data was examined by sex and traditionality, and when compared with respect to similar items from different instruments. For these reasons we decided to treat them as equivalent, and the results presented for any item will include every respondent to that item.

By saying the groups are similar and equivalent with respect to sex, we are referring to the sex ratio of returns for each instrument; this is evident in Table 1 in the column headed "Percent Male." The same proportion of males and females are represented on each instrument--57 percent male and 43 percent female students. Even the supervisors returned their forms for identical proportions of female and male students. This consistent finding suggests that, in terms of the sex composition, our samples for the three instruments are similar to one another and also representative of college students nationally: between 56 and 57 percent of college students in the United States graduating with baccalaureate degrees in recent years were male.[1]

Curriculum and Traditionality

Since the primary focus of this investigation concerns the co-op experience as it relates to the students' sex and the sex-traditionality of their co-op job, a major methodological task was one of operationalizing the definition of sex-traditionality. Sex-traditional jobs refer to the proportion of females and males in a job classification. Thus engineering is a male-dominated (or traditionally male) occupation because 99 percent of employed engineers nationally are men; similarly, nursing is a traditionally female occupation because of the overwhelming preponderance of women nurses.

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[1]U.S. Department of Health, Education, and Welfare, Education Division. Digest of Education Statistics, 1975 Edition, Table 104, pp. 102-107 (referred to below as the Digest). This is the source of all statistics presented subsequently concerning the proportion of males and females in the general college population. More recent statistics, that became available after we used the 1975 edition to code majors, show a larger proportion of female college graduates.

Occupations in which men and women are represented in proportion to their representation in the overall labor market are generally designated as neutral.

Our sample co-op students' job titles were not sufficiently useful (for a variety of reasons noted earlier) for classification. We, therefore, substituted their academic major--fully cognizant that there are many instances in which students are placed in jobs that are not related to their field of study. This section presents an overview of the students' college majors in terms of standard curricular groupings, and then discusses why and how we partitioned the entire sample into the traditionality groups, together with the outcomes of the process--that is, the composition of the analytic groups in terms of sex balance, size of groups, and the specific majors within them. It was possible to identify the majors of 700 students.[1]

Our first step was to combine the separate majors into standard curricular areas and to calculate the sex ratio of these areas for the general college population.[2] This procedure produced some interesting patterns, but was not a satisfactory method for grouping for our purposes. Engineering, which accounted for 29 percent of the students in the sample, and Business and Management, with 26 percent, far outnumbered any other curricular areas. The two next most common standard curricula, Public Affairs and Services, and the Health Professions, accounted respectively for only 7 percent and

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[1]There were initially 867 students (not including "late returns") who agreed and were eligible to participate as subjects. Of these, 86 percent (742) completed or had their supervisor complete one of the instruments. Of the 710 different students who completed the Log, 700 had decided on and listed a major.

[2]The titles of these standard groupings are the same as the main headings in Table 104 of the Digest. The titles of the curricular areas and the specific majors included in each conform to the classifications in: Huff, R.A. and M.O. Chandler, A Taxonomy of Instructional Programs in Higher Education, National Center for Educational Statistics, Washington, D.C., 1970. For a complete listing of all specific majors of students in our sample, see Appendix, Table C1.

6 percent of the entire group. In some curricula, the proportions of men and women in the sample were roughly equivalent--notably in Business and Management, and also, although the Ns were quite small, in Public Affairs and Services, Computer and Information Sciences, Social Sciences, Biological Sciences, and Agriculture and Natural Resources.

In some other curricula, however, the proportions were quite dissimilar, usually because the specific majors subsumed in those standard areas differed widely in sex ratios. For example, in the national college population Public Affairs and Services was 52 percent male, but within that area the specific majors ranged from 25 percent male (Social Work and Helping Services) to about 90 percent male (Public Administration, and Law Enforcement and Corrections). Moreover, there were other instances in which one sex or the other was even more minimally represented.

It was obvious that grouping by the standard curricula would not serve our purpose--that of contrasting the experiences of males and females in several different fields, each of which was non-traditional for one of the sexes. We decided that the female-male ratio in specific majors furnished a better basis for defining analytic groups. Using the general college population ratio (from Ns in the Digest), we placed the specific majors of the students in our sample in sequential order from lowest to highest proportion of males. It then seemed reasonable to divide the subjects into three groups, representing clusters of majors that were traditionally male, traditionally female, and neutral with respect to the distribution of college women and men generally. The question then was where to draw the cutting lines.

We wanted to achieve as good a balance as possible between the proportions of male and female co-op students in each of the three groups, so as to make statistical comparisons more valid; at the same time, there should be some "face validity" to the groupings--that is, at least some similarity in the content of the majors placed within any one group. The cutting points chosen also depended,

of course, on the makeup of the total sample, which contained far more male-dominated majors than any other type. Dividing the total into thirds to achieve equal Ns made no sense; this would have split the engineering majors, for example, leaving metallurgic engineers in one group and chemical and nuclear engineers in the middle or neutral group.

Keeping all these considerations in mind, cutting points were chosen as follows:

| Percent Male in General Population | Analytic Groups | N of Majors Included | N of Students | Percent of Total Sample |
|---|---|---|---|---|
| 28% or less | Female Dominated (FD) | 13 | 93 | 13% |
| 29% to 84% | Neutral (NT) | 26 | 115 | 17% |
| 85% or more | Male Dominated (MD) | 42 | 492 | 70% |

With the cutting points established, we can now discuss the resulting traditionality groups (FD, NT, and MD), and the two subgroups, namely, Engineering (Egr) and Business (Bus) in terms of the kinds of curricula and majors each group includes.

The curricula in the female-dominated (FD) group consist mainly of the Health Professions, Education, and Public Affairs and Services. The majors included in the MD (male-dominated) group are mostly in Engineering (which itself includes 16 specific types of majors) and Business and Management curricula (12 specific majors); much less commonly (each accounting for less than 10% of the MD group), Public Affairs and Services, Computer and Information Sciences, Agriculture and Natural Resources, and (rarely) Physical Sciences. The Neutral (NT) grouping has the greatest diversity of curricular areas and hence of majors: About 10 to 20 percent of the NT students were majoring in each of the following (in decreasing order): Biological Sciences, Social Sciences, Psychology, Communications, and Letters (English, philosophy, forensics). Other curricular areas which account for 5 to 10 percent of the NT (neutral) students are Fine and Applied Arts, Education, and Interdisciplinary Studies.

Within the MD grouping, there were sufficient numbers of male and female students in the sample in Engineering and in Business and Management to form two other analytic groups, so as to allow examination of these two specific fields that are traditionally heavily male-dominated. Within the NT and FD groups, however, it was not possible to form subgroups based on any clusters of similar majors, as we did with Engineering and Business. For example, while half of the FD men and nearly half of the FD women were majoring in the Health Professions, there was no one major or cluster of related-content majors with large enough Ns or sufficiently balanced sex ratios to permit separate analysis. We did form seven other groups of majors--for which we did some analyses--but the numbers of cases were too small (e.g, Math and Computer Science, the largest of these, contained only 35 students) or the sex distributions too unequal (100% of one sex) for any meaningful interpretation.

Student Groups for Data Analysis

Table 2 (page 18) shows, for each of the three instruments, the Ns resulting from use of the cutting points discussed above; these figures represent the maximum possible numbers of cases available for analysis if everyone responded to every item. A "Traditionality Total" is also included, which is the sum of FT, NT, and MD. This total illustrates a point mentioned earlier, namely, that the sum of FD, NT, and MD males or females is slightly less than the total of All males (402 vs. 405) or All females (298 vs. 305) because of students who did not indicate any major.

Inspecting the three traditionality groups, we can note first that for each instrument there are large numbers of MD students, who include about twice as many men as women. There are fewer NT students, but with approximately equal numbers of each sex. Last, there is a striking scarcity of FD men; however, the group of FD women is fairly sizable, and larger than the group of NT women.

TABLE 2

NUMBER OF RESPONDENTS PER INSTRUMENT,
SHOWN BY SEX FOR EACH GROUP ANALYZED

| INSTRUMENT | SEX | STUDENT GROUP | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ALL | Trad. Tot. | FD | NT | MD | EGR. | BUS. |
| Log | M | 405 | 402 | 12 | 52 | 338 | 167 | 107 |
| | F | 305 | 298 | 81 | 63 | 154 | 34 | 76 |
| | M+F | 710 | 700 | 93 | 115 | 492 | 201 | 183 |
| Questionnaire | M | 306 | 304 | 9 | 35 | 260 | 140 | 76 |
| | F | 233 | 227 | 66 | 44 | 117 | 24 | 52 |
| | M+F | 539 | 531 | 75 | 79 | 377 | 164 | 128 |
| Supervisor's Evaluation | M | 242 | 240 | 8 | 30 | 202 | 113 | 56 |
| | F | 185 | 182 | 48 | 38 | 96 | 23 | 40 |
| | M+F | 427 | 422 | 56 | 68 | 298 | 136 | 96 |

NOTE: The "Traditionality Total" is the sum of FD+NT+MD; it excludes the 10 students who did not indicate a major, although they are included in the Entire group (All male + All female students).

On all three instruments, the Engineering and Business groups considered together constitute just over four-fifths of the MD group; separately, the Engineering group makes up about half, and the Business students about 30 percent of the male-dominated group. In the Business group, the sample of women approaches the size of the men's sample. The group of Engineering women is not as large as we would like, but (using the appropriate small-sample statistics) it seems large enough to permit reasonably sound generalizations. To summarize the implications of these sample sizes as they affect the analysis and interpretation of data, the main caution is that the group of FD men is at best so small

(especially since occasional nonresponses occur) that their results are very unreliable; the discussion will therefore generally disregard them. One conclusion that can be drawn from these numbers is that, while women are moving into formerly male-dominated fields, men are staying in those areas too, and not shifting into female-dominated areas. Considering the generally higher salaries and prestige associated with the traditionally male occupations, this phenomenon is not surprising.

We have not shown any percentages in Table 2; the proportionate relationships can be looked at in such a variety of ways--percentages by sex, by traditionality, by sex within traditionality group, and so on--that they become confusing within a table. Instead, a few overall comments will suffice. First, the percentage relationships, however looked at, remain quite constant across the three instruments. This furnishes additional confirmation for treating the three samples of students as equivalent. As an illustration, for each instrument the overall proportions of the Traditionality Total are about 71 percent MD, 16 percent NT, and 13 percent FD. The fact that the MD student group constitutes a large majority of the whole sample means that results for MD and All students may be very similar. Therefore, when a result for MD <u>differs</u> from that for All students, it can be given greater interpretive weight as indicating a true difference between MD students and the other two traditionality groups (NT and FD). The same point applies to the Engineering and Business groups; if either the Engineering or the Business group differs appreciably from the MD group as a whole, then such a result has greater interpretive weight.

Finally, with respect to sex ratios, the overall 57:43 male-female ratio does not hold within the partitioned groups. In terms of their proportionate representation on all three of the instruments, men predominate in the MD group (about 85% of all men and 52% of the women fall in the MD group), while women slightly out-

weigh men in the neutral group (about 21% of all females vs. 12% of the males), and make up almost all of the FD group (about 27% of all women vs. 3% of the men fall in the FD group.) This distribution, of course, is to be expected, given the fact that traditionality is defined by the predominance of one sex or the other.

The Student's Supervisor

While Table 2 shows the total number of supervisors who rated male and female students, it does not indicate the supervisor's sex. Our previous studies did not fully answer the question of whether or not male and female supervisors rate students differently, depending on the match between the sex of the supervisor and the sex of the student. This investigation allows us to examine, in more detail, the possible influence of the supervisor's sex on the ratings. Table 3, page 21, presents the numbers of male and female supervisors for each student group; 10 supervisors did not indicate their sex, leaving 417 for these analyses. Before discussing this and any other point about the sex of the supervisor, we want to clarify one important assumption. For ease of analysis and interpretation of the data, we are assuming that each co-op student rated by a supervisor was rated by a different supervisor. Although this might not indeed be the case where several students with similar majors are placed in one organization, we did not ask for either the name of the employing organization or the name of the supervisor. Therefore, when we discuss supervisor's sex or the match between sex of supervisor and sex of student, we are treating the students for whom we received the Supervisor's Evaluation as having been rated by different individuals.

As can be seen in Table 3, about three-fourths (74%) of all supervisors were male. In several of the partitioned student groups, the number and proportion of female supervisors is very small, and they outnumber male supervisors only for students in the FD group. There is only one female supervisor in the whole Engineering group--

TABLE 3

SEX OF SUPERVISORS: NUMBER OF MALE AND FEMALE SUPERVISORS FOR EACH STUDENT GROUP

| STUDENT GROUP | | Number of Male Supervisors | Number of Female Supervisors | Percent of Male Supervisors |
|---|---|---|---|---|
| ALL | M | 204 | 33 | 86% |
| | F | 105 | 75 | 58 |
| | M+F | 309 | 108 | 74 |
| Traditionality Totals (FD+NT+MD) | M | 202 | 33 | 86 |
| | F | 104 | 73 | 59 |
| | M+F | 306 | 106 | 74 |
| FD | M | 2 | 5 | 29 |
| | F | 14 | 34 | 29 |
| | M+F | 16 | 39 | 29 |
| NT | M | 18 | 11 | 62 |
| | F | 18 | 17 | 51 |
| | M+F | 36 | 28 | 56 |
| MD | M | 182 | 17 | 91 |
| | F | 72 | 22 | 77 |
| | M+F | 254 | 39 | 87 |
| EGR | M | 108 | 1 | 99 |
| | F | 23 | -- | 100 |
| | M+F | 131 | 1 | 99 |
| BUS | M | 43 | 13 | 77 |
| | F | 25 | 14 | 64 |
| | M+F | 68 | 27 | 72 |

NOTE: Of the 427 supervisors who responded, 10 did not indicate their sex, leaving 417 for analyses by sex of supervisors.

who, as it happens, supervised a male student. Because of these imbalances, we will present the results of the effects of sex of supervisor only for All men vs. All women. For these comparisons, note that 86 percent of All male students had a male supervisor, and 14 percent a female supervisor; of All female students, 58 percent had a male supervisor and 42 percent a female supervisor.[1] In summary, the sex distribution of the supervisors in our sample seems to be generally in accord with that which prevails in the world of work at large--with males predominating in all fields except those considered traditionally female.

Data Analysis and Interpretation

For the analyses of sex differences we used *t* tests for means of scaled scores, and chi square tests (or Fisher's exact test with small Ns) for frequency data (i.e., where proportions were involved).[2] Differences reaching the 5% level will be considered significant; those reaching the 10% level will also be shown in the tables. The sex differences are always presented in the tables as males minus females (M-F); thus a positive difference means the men have the higher score; and a negative difference means the women have the higher score. The data have been rounded--percentages to whole numbers, and means to one decimal place; but the tables retain the prior sign for any differences rounded to zero (i.e., +0 or -0).

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[1] In Table 3, as in most of the tabled results that follow, we have presented only the percentage of males; the reader can easily obtain the percentage of females by subtraction.

[2] There were several reasons why we did not use an analysis of variance approach to examination of three traditionality groups by sex; the most persuasive to us was the very unequal Ns per group (e.g., extremely large MD group, tiny FD male group); and separate tests of sex differences would still be necessary for the Engineering and Business groups.

Nonrespondents are not included in any calculations. Thus the base of the percentages, or the Ns associated with means, represent the students who did respond to the given items. Furthermore, the tables do not shows Ns per item; to do so would only produce great visual clutter. Instead, for each instrument we obtained an average rate of response, calculated over a large series of items.[1] On the Log, an average of 96 percent of the Entire group responded to items involving amount of work time (locations, persons, and activities), 84 percent to appropriateness of activities items, and 72 percent to rest/social time items. On both the Questionnaire and the Supervisor's Evaluation, the average rate of response was again 96 percent for activities and personal qualities items. Thus for the items of primary interest, where the response rate was 96 percent, the Ns per item are usually only a little less than the Ns per group shown in Table 2. For the Log appropriateness and rest/social items, which are of secondary importance, the average Ns are somewhat further reduced (by 16% and 28%, respectively). To answer these latter items required going back through the lists a second time, which some students obviously didn't do. But on the Questionnaire activities and personal qualities items, which also required going through the lists more than once, there was very little drop in response rate for the second run-through.

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[1]What was actually calculated is the rate of nonresponse (NR) for the Entire group, summing the exact number of NRs for every item in a series. The number of items averaged to yield the response rates shown in the text is as follows: Log work time, 82 items; Log appropriateness, 46; Log rest/social time, 36; Questionnaire, 184 activities and personal qualities items (not including importance items); and Supervisor's Evaluation, 126 activities and personal qualities items. Separate calculations of the nonresponses for men and women showed essentially no differences between them. One item was dropped from further analysis because an extremely large number of students (131) skipped it; this was the last entry on the Log Persons list, "no one" (i.e., "I was working alone"). We will discuss this item later.

A few other comments are pertinent to the presentation and discussion of results: Dashes (--) in the tables, connoting zero, may have importance: even though such cases do not permit statistical tests of differences, they indicate that no students engaged in a particular activity. For example, the blank in Table 3 shows that none of the female engineering students was rated by a female supervisor, while the blanks in Table 5 indicate, for example, that no male engineers worked for financial, accounting, or insurance types of organizations. Note also that in the tables, results based on Ns of 2 to 4 are shown in parentheses as a reminder of their unreliability. Finally, in discussing results we may say, for example, that "more of the men lifted or carried"; such a statement always means proportionately more of the men--that is, for the given item, the percentage of male students is higher than the percentage of female students. A final point to keep in mind when interpreting the results is that the responses generally represent students' self-reports.

## RESULTS

This, the major section of the report, begins with a brief description of the academic characteristics of the students--their class standing, grades, educational aspirations, and the like. Next we will present an overview of some general aspects of their working environment and job conditions, before proceeding to the main body of data describing the specific details of the jobs: The locations, persons, and activities with which students are involved; how students spend their work time and social time; and their perceptions of the appropriateness of and their ability to perform the activities. Then we will inspect the supervisors' ratings of the students, comparing these with the students' perceptions, and looking at possible effects of the sex of the supervisor on the ratings. The students' personal qualities,

as viewed by students and by supervisors, will also be discussed. The final information to be presented pertains to the students' future career plans and the general outcomes of the co-op work experience--in what specific ways the students found it useful.

The Subjects as College Students

Since this study focused exclusively on the first co-op work placement, we could expect that most of the students would be in the early years of college. Although just over half the group were sophomores (51% M, 54% F), there was also a relatively large number of middlers[1] and juniors (34% M, 26% F). Of the small remainder, seniors were most common (10% M and F); there were a few freshmen (4% M, 8% F), and, rarely, a graduate student (1% M, 2% F). The distributions of academic year were very similar for men and women--with the women perhaps slightly less far along in their education than the men, suggesting that they may start co-op earlier.

In terms of grade point average, most students reported grades of B or better (64% M, 77% F), and about one-sixth had A averages.[2] Only 4 male students, and no females, reported averages below C. As these figures suggest, the self-reported grade point averages were somewhat higher for the women than the men.

With respect to educational aspirations, there was no difference between the men and women. Exactly half of both sexes said they planned to get a master's degree; about a third (31%) were not

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[1] "Middler" is the designation applied to the year between sophomore and junior at one participating college whose co-op program is five years in duration.

[2] The 14 students (2 M, 12 F) in ungraded programs were not included in the calculation of these percentages.

planning to continue schooling beyond the baccalaureate level, and with the exception of those who were undecided about their future educational aims (3%), the remainder wanted a doctorate or professional degree (e.g., Ph.D., M.D.) or a special credential (e.g., C.P.A., P.E.). These results are particularly interesting because in the authors' experience outside of co-op, far larger proportions of college students are usually undecided about their future plans.

When asked if they had changed their major since starting college, about one-fourth of the students (24% M, 27% F) said yes, they had done so. We were curious about whether such changes would be more common in, say, the NT than the FD group, or, for example, by sex within a group. But the results would obviously depend on other factors such as academic year, since juniors and seniors have had more opportunity to change majors than freshmen or sophomores. Indeed, that was the case: More of the upperclass students (juniors and seniors) had changed their majors; however, these proportions were not large, suggesting that there was some stability in students' choice of college majors.[1]

One additional piece of information would have been useful for a clearer understanding of changes in major: Was the change to a completely different major, or was it a change within the same general area? Since we did not ask, we cannot be sure; nevertheless, at least two things are clear. Looking at juniors and seniors combined, in every analytic group more women had changed majors than had their male counterparts (excepting the FD men--an unreliable figure). This tendency was most marked for the Engineering women; however, in our

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[1]These statements are based on cross-tabulations, by group, of academic year and change of major, but we have not included the actual figures in this report. When we make such statements, here and elsewhere in the text, without presenting tabled results, the supporting data and analyses are available for inspection in our offices.

personal (admittedly limited) experience, changing majors within the field of engineering is fairly common for female students. Next, regardless of academic year, changing majors was far less common among the FD women than any other group, male or female; a girl who wants to be a nurse or a teacher seldom changes her mind about it, at least while in college. Taken together, these results call for a much fuller investigation of possible relations between changes in major and the co-op experience.

What kinds of academic and personal problems were of concern to these co-op students? In relation to seven specified areas,

TABLE 4

THE STUDENTS' ACADEMIC AND PERSONAL PROBLEMS: MEAN RATINGS OF SEVERITY

| PROBLEM AREAS | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Finances | M | 1.8 | 1.7 | 2.0 | 1.7 | 1.7 | 1.8 |
| | F | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 |
| | M-F | +0 | -.1 | +.2$^{\Delta}$ | -.1 | +0 | -0 |
| Grades and study habits | M | 1.8 | 1.6 | 1.7 | 1.8 | 1.8 | 1.7 |
| | F | 1.7 | 1.7 | 1.6 | 1.7 | 1.9 | 1.7 |
| | M-F | +.1 | -.1 | +.1 | +.1 | -.1 | +0 |
| Personal problems | M | 1.6 | 1.8 | 1.8 | 1.6 | 1.6 | 1.7 |
| | F | 1.7 | 1.6 | 1.7 | 1.8 | 1.9 | 1.7 |
| | M-F | -.1 | +.2 | +.1 | -.2* | -.3* | -0 |
| Deciding courses | M | 1.5 | 1.3 | 1.7 | 1.5 | 1.4 | 1.6 |
| | F | 1.5 | 1.3 | 1.8 | 1.5 | 1.4 | 1.3 |
| | M-F | +0 | 0 | -.1 | +0 | -0 | +.3** |
| Other academic requirements | M | 1.4 | 1.1 | 1.5 | 1.4 | 1.3 | 1.6 |
| | F | 1.4 | 1.3 | 1.5 | 1.4 | 1.4 | 1.4 |
| | M-F | +0$^{\Delta}$ | -.2 | +0 | +0 | -.1 | +.2$^{\Delta}$ |
| Deciding major | M | 1.4 | 1.4 | 1.5 | 1.4 | 1.3 | 1.5 |
| | F | 1.4 | 1.2 | 1.6 | 1.3 | 1.3 | 1.4 |
| | M-F | +0 | +.2 | -.1 | +.1 | +0 | +.1 |
| College rules and regulations | M | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.2 |
| | F | 1.1 | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 |
| | M-F | +.1** | +.1 | +0 | +.1** | +.2 | +.1 |

NOTE: Significance of differences is shown as follows: ** = 1% level; * = 5% level; $\Delta$ = 10% level. A $\pm$ 0 results from rounding; a 0 (with no sign) indicates that the M and F values were exactly equal.

students rated how much of a problem each had presented to them during the (then) current school year.[1] Looking at the results in Table 4 for all analytic groups, few students had significant problems in any of the areas. Of the means in the table, the highest was 2.0, or "some problem" --and this was for NT men with respect to finances. Almost no one had any problem with college rules and regulations, and few had problems deciding on a major, on what courses to take, or with other academic requirements. Students in every group tended to report the most serious problems with finances; the area of grades and study habits and personal problems ranked nearly as high in severity. Even in these areas, however, only from about a tenth to one-sixth of any group reported major problems.

Of the seven problem areas listed, we do not know why finances was comparatively the most severe for the students. While it may be a problem for almost all college students, our data does not permit us to make this generalization. The data does, however, suggest that co-op students may choose a cooperative education to help with expenses--a supposition that finds some support in the literature.

Re-examining Table 4, it is apparent that sex differences in the ratings of the severity of these problem areas were quite small, but a few did reach statistical significance: All men and MD men had more serious problems with college rules and regulations than the corresponding women, and men in Business had more problems with deciding on what courses to take (these differences all reached the 1% level). The groups of MD women and Engineering women (who are a part of the MD group) both reported more personal problems than their male counterparts (5% level). We cannot explain why men in traditionally male fields have difficulty (even though the means are very low) with such things as rules and regulations, nor why

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[1]The scale was: 1 = no problem, 2 = some problem, 3 = major problem.

females in fields nontraditional for women have more personal problems than males in these fields. While this may be a real difference, the fact is that All female students reported slightly more personal problems than All male students. It may be that women are generally more aware of or willing or able to talk about personal problems than men.

The Students' Co-op Jobs

As noted earlier, reported job titles were too imprecise or vague to serve as a basis for classifying students into subgroups for data analysis. In contrast to job titles, the college majors were very precise, and were available for almost all students; thus the majors provided the best available alternative basis for student classification. Since we wish to concentrate on co-op job performance, the first two questions that arise are what types of jobs they hold and whether these jobs are related to their college majors or curriculum. Knowledge of the kinds of organizations that employ them provides some information--by no means perfect--about the kinds of jobs and experiences they had as co-op students; and specific questions concerning the match between job and major provides additional information.

Place of employment. Irrespective of the type of organization or the nature of its business, within the company both female and male co-op students usually worked in a relatively small unit, with a supervisor who oversaw the work of 20 or fewer people (84% F, 86% M). Inspection of the type of organization in which the students worked showed that more than half (52%) of the Entire group (All men + All women) worked for a private organization, and about a fifth (22%) worked for the Federal government; the rest worked for state or city governments or for other nonprofit organizations. Equal proportions of men and women were in government employment (Federal, state, or city). The only

marked sex difference was that almost twice as many men as women worked for private organizations (63% M, 37% F), whereas more women than men worked in nonprofit organizations (18% F, 6% M).

The nature of the business conducted by the employers of the various groups of students provides some, although indirect, evidence concerning the match between the students' majors and co-op jobs. It is quite true that a student's job could bear little relationship to the employer's primary business function; for example, a student employed by a school or college is not necessarily employed in an educational (i.e., teaching) capacity, but may be employed as a nurse's aide or in security. Still, it seems fair to assume that during their co-op placement students will receive some exposure to the kind of business activity in which their employer primarily engages. On the basis of this assumption, the results in Table 5 (page 31) support the presence of a correlation between the employer's business and the student's major.

At the left of Table 5 are the categories checked by students to indicate their employer's business; these categories are listed in decreasing order of frequency for the Entire student group. The analytic groups are shown in columns, and each column in the table, reading down, adds to 100 percent. Arranged this way, the table allows us to see whether, for example, most FD students worked in organizations whose business could be considered female-dominated, or if the Engineering majors worked in engineering-related companies, and so on. Let's look at the FD group first. Most of the FD students (students majoring in fields in which women predominate) worked for employers whose activities involved health and social services or education, which are acknowledged female-dominated occupational areas. For the Engineering majors, it seems reasonable to assume a very close relation between major and co-op job, since they worked mainly for manufacturing, engineering, and research organizations, as well as for utilities or energy-source processors. Similarly, most of the Business majors worked for financial

TABLE 5

PRIMARY BUSINESS OF THE EMPLOYING ORGANIZATION: PERCENTAGE OF STUDENTS IN EACH GROUP WORKING IN THE LISTED TYPES OF COMPANIES

| BUSINESS OF EMPLOYING ORGANIZATION | N | Student Group | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALL | | FD | | NT | | MD | | EGR | | BUS | |
| | | M | F | M | F | M | F | M | F | M | F | M | F |
| Manufacturing | 98 | 25% | 9% | 11% | -- | -- | 7% | 29% | 15% | 39% | 25% | 20% | 15% |
| Research org., lab | 78 | 19 | 10 | -- | 5 | 25 | 9 | 18 | 11 | 25 | 16 | 3 | 2 |
| Financial, accounting, insurance | 67 | 12 | 13 | -- | -- | 3 | 7 | 13 | 24 | -- | 4 | 42 | 42 |
| Health & social services | 66 | 5 | 22 | 56 | 55 | 20 | 28 | 1 | 2 | 1 | -- | -- | 2 |
| Educational organization | 51 | 6 | 14 | 22 | 30 | 26 | 18 | 3 | 3 | 1 | -- | 3 | 2 |
| Engineering | 27 | 7 | 3 | -- | -- | 3 | -- | 7 | 6 | 12 | 25 | 3 | -- |
| Computer organization | 26 | 6 | 3 | -- | -- | 5 | 2 | 6 | 6 | 5 | -- | 4 | 4 |
| Public utility, oil, gas, mining | 19 | 5 | 2 | -- | -- | -- | 2 | 6 | 2 | 11 | 10 | -- | -- |
| Retail store | 14 | 2 | 3 | -- | 2 | -- | 2 | 3 | 4 | -- | -- | 9 | 9 |
| Park, farm, etc. | 12 | 1 | 3 | -- | -- | -- | -- | 2 | 6 | 1 | -- | -- | -- |
| Advocacy organization | 10 | 1 | 3 | -- | 1 | 3 | 7 | 1 | 2 | 1 | -- | 1 | -- |
| Food service | 9 | 2 | 1 | -- | 2 | -- | 2 | 2 | 1 | -- | -- | 4 | 2 |
| Communications (incl. media & library) | 8 | 1 | 2 | -- | -- | 6 | 7 | 1 | 2 | -- | -- | 1 | 4 |
| Law enforcement, security | 8 | 1 | 2 | -- | 2 | -- | -- | 1 | 3 | -- | -- | -- | 2 |
| Law firm, legislature | 7 | 1 | 2 | -- | -- | -- | -- | 1 | 4 | -- | 4 | 1 | -- |
| Govt., unspecified | 16 | 2 | 4 | -- | 1 | 6 | 7 | 2 | 4 | 2 | 8 | 1 | 6 |
| Miscellaneous | 22 | 4 | 4 | 11 | 2 | 3 | 2 | 4 | 6 | 2 | 8 | 8 | 10 |
| TOTAL | 538 | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

NOTE: Ns per group are the same as those shown in Table 2 for the Questionnaire, except for 1 male student (MD, EGR ) who gave no response.

organizations (including banking, stock brokerages, accounting, and insurance firms) or for a manufacturer. The NT group, which represents the greatest diversity of majors, is also more scattered across the whole range of employer categories, so it is more difficult to support a correlation between major and job. Note that the MD group is also widely scattered, especially the MD women.

With respect to sex differences, when we look at All men and All women in Table 5, we see that certain kinds of organizations employ a greater proportion of one sex or the other--a predictable outcome, and one that reflects the composition of our sample in terms of career interests. Among the employer categories with fairly large frequencies, only the business-related organizations employed equal proportions of All men and All women. What is more crucial, however, is the sex balance <u>within</u> the traditionality groups, and there (with some exceptions) the proportions of men and women working for a given kind of employer are much more nearly equal.

We will leave more detailed examination of the table to those readers who are especially interested. One final point seems important: Whether the proportions of men and women working for a given kind of employer are equal or unequal, a strong possibility remains that their <u>jobs</u> differ. We will examine this in greater detail later, but for an initial overview, we looked at the two most extreme nontraditional groups--the FD men and the Engineering women--to see what kinds of jobs they held. The job titles listed by the students in these two groups were sufficiently specific to permit general comment. The 12 men majoring in female-dominated fields had jobs related to education, physical and rehabilitation therapy, hospital escort service, food service, kitchen design, merchandising, and group work (a house manager of a community residence). Thus the jobs of these few men are very diverse, and seem different from the jobs of the FD women. No FD men worked

or majored in nursing, but 27 percent of the FD women were nursing majors and an identical proportion had a co-op job related to nursing. In contrast, the 34 women majoring in Engineering had jobs related to varied branches of engineering--chemical, "polymer quality control;" civil, "construction inspector;" and electrical, "meter technician." We conclude that the co-op jobs of the Engineering women were not systematically different from those of the Engineering men, but that the jobs of the FD men did differ somewhat from those of the FD women.

We know the match between major and job is not perfect; some colleges deliberately place students in jobs outside their major area, in order to increase their exposure to varied occupations. It is, however, a more common practice for the colleges to attempt some match with the student's interests. Several pieces of internal evidence attest to the closeness of the match; some of these will be discussed here, and some later.

The match between major and job. First, students rated three items that concern the match between major and job. Two items concerned the match directly--namely, the relevance of the co-op job to their major and their future plans, and the closeness of the match between the co-op assignment and the kind of job they wanted to try out--and one (about enjoyment) was less direct. In all groups analyzed, ratings of relevance were between "somewhat" and "very" relevant, with means ranging from 2.2 to 2.6.[1] Within each analytic group, men and women judged their jobs as equally relevant to their major and plans, although the women's ratings tended to be a little (not significantly) lower--that is, not quite as relevant.

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[1]These items used 3-point scales, from 1 = not at all, to 3 = very much (see the appended Questionnaire for the exact wording).

With respect to closeness of the match between the co-op job and the desired job, the ratings were slightly lower than the ratings for relevance, but all the means were above 2.0 ("somewhat closely") except for women in Engineering, whose mean was 1.8. In each group men tended to feel there was a closer match than did women, and significantly so (5% level) in the Engineering and Business groups. Again, several explanations are possible: Perhaps appropriate jobs are harder to find for the women, and especially for those majoring in Engineering and Business, which are both male-dominated areas; in other words, one possibility is that the ratings are realistic. This speculation does not accord with common sense--the experience of most co-op coordinators is that employers in "male" businesses are searching for female candidates for jobs. Other interpretations are that women, although treated equally (or better) in co-op placements, are less satisfied, less easily satisfied, or more demanding in terms of their own expectations; or perhaps the women are simply more willing to discuss dissatisfaction.

Ratings of enjoyment of the job do not clarify these explanations. No sex differences were significant, but again women's ratings tended to be slightly lower than men's, except in Engineering where both sexes enjoyed their jobs equally (mean, 2.6). All the means ranged between 2.4 and 2.8--that is, they approached "enjoyed the job very much." In every group, the mean rating of how much the students enjoyed the job was higher than their mean for either closeness of match or relevance to their major and future plans. Thus regardless of how they felt about the closeness or relevance of their co-op jobs most students found them enjoyable.

Answers to two other questions have implications about the match between major and job, although not quite as directly as the items discussed above. Students answered (yes or no) whether their co-op assignment met their expectations, and whether it helped to clarify their future career plans. Of the 531 respondents,

8 (1.5%) said they had no prior expectations--a clear indication that almost all co-op students start their work experience with definite expectations. Overall, about four-fifths of the students said their job met their expectations (All, 78% M and F) and helped them to clarify their career plans (All, 80% M and F). There were no significant sex differences in any group on either question. More of the NT and FD men (91% and 89%, respectively) than men in other student groups had jobs that met their expectations--a somewhat surprising result, considering that these are the least traditionally male student groups. The Engineering men had the lowest proportion (71%) of students with jobs that met their expectations. In contrast, the Engineering women scored the same as All women (78%). With respect to whether the job helped clarify future career plans, the groups with the highest proportions for whom this was true were the Engineering women (88%) and the men in Business majors (87%); the lower proportions were for NT women (73%) and women in Business (75%).

In summary, while the jobs of the women in Engineering and Business did not match the job they wanted as closely as was the case for the men in these groups, they did enjoy their jobs about as much as the men, and found their jobs nearly as relevant to their major and their future career plans. Further, the jobs helped proportionately more women than men in Engineering to clarify future career plans, and more of the Engineering women had their expectations met by their first co-op job. Women in Business, while they enjoyed their jobs fairly much, scored lower than the men in Business on all these items. We will see later whether these two groups of women spent their work time at different or more routine activities than the corresponding men.

Working Conditions and the Work Environment

On their co-op jobs students most commonly worked a full five-day week (93% M, 85% F), from 8:00 or 9:00 A.M. (83% M, 81% F) to

4:00 or 5:00 P.M. (81% M, 75% F), Mondays to Fridays. Working on weekends was infrequent, although a little more common for the women (20% F, 13% M).

Students reported the length of their work day on both the Log and the Questionnaire. These two sources corresponded closely, so we will report data from the Log, which has the larger N. From time of arrival at work to time of departure, on the average the men spent 8.9 hours, which is significantly more than the women's mean of 8.6 hours (2% level). These means include lunch (or meal) time, which we assume probably takes up a half hour to one hour. In view of the small amounts of overtime (see next paragraph), it seems that an 8-hour work day was much more common for these students than a 7-hour day.

Overtime. In terms of actual hours of overtime, three-fourths of the students said they put in only 2 hours or less of overtime per week (74% M, 79% F); and nearly three-fifths of the students never worked overtime (54% M, 59% F). The student's perceptions of the frequency of overtime were obtained from their ratings on a 4-point scale (from 1 = never to 4 = often). For all groups examined, the means clustered around 2.0, or "rarely." The means for both the men and the women in the NT group (2.3 M, 2.1 F) were slightly higher than the means in the other groups, while the men and women in the FD group on the average reported the least overtime (1.9 M, 1.7 F).

Given these small amounts of overtime, sex differences were small in magnitude; nevertheless, there was a consistent trend--in every group analyzed, the men reported more overtime than the women. All men, as compared with All women, reported significantly more overtime (1% level), as did the men in Engineering (5% level); also, the difference between MD men and women tended toward significance (7% level).

More overtime for men agrees with the finding of more hours per day for men and with informal reports of employers who are reluctant to ask women (especially young students) to stay late. The fact that students of both sexes in the female-dominated areas had the least overtime supports the supposition that supervisors of these students are treating them equally, but as they habitually treat women. Men in the more traditionally male fields (All men, MD, and Engineering) report the most overtime--similar to the way they report more of everything. We will return to this point when we examine work activities and the appropriateness of the tasks students perform.

As compensation for those who did work overtime, about two-thirds received pay. But pay for overtime was much more common for men than for women (70% M, 57% F). This difference is largely attributable to the MD group, which had by far the largest sex difference (59% M, 25% F). The general literature supports these findings in part: Women, especially professional women, work more hours a week at their jobs, but usually without formal compensation. This is usually explained by their belief that they have to work harder than men to maintain their professionalism. In terms of compensation for overtime in the other groups analyzed (NT, FD, Engineering, and Business), the sexes were treated about equally; however, the sex differences still favored the men, except in the Business group, where slightly more women than men were paid (79% F, 73% M). Pay for overtime was most common in the Engineering and Business groups, and least common in the NT group; again perhaps because the NT (and FD) jobs are least "male." Time off as compensation for overtime was received by small proportions--about a tenth of the students or less--in all groups analyzed, with minimal sex differences. The least compensatory time off was given to the FD and the Business groups, the groups least likely to put in overtime hours. Looking at those who received no compensation

for overtime, the results are generally the reverse of those for pay, as would be expected. In the Entire sample, 30% of the women but only 18% of the men received no compensation of any kind. Lack of any overtime compensation predominated in the NT and FD groups (NT: 38% M, 46% F; FD: 40% M, 40% F).

Worker independence. Certain questions give some indication of the amount of freedom or independence co-op students had at work. One of these asked what choice students had about when to take meal and rest breaks. In general, more than half the students said they could take these breaks when they wanted, while for about two-fifths the supervisor set the times. Sex differences were minimal, suggesting that the degree of choice was not dictated by the sex of the student, but rather by other factors, such as job conditions or requirements. Supporting this interpretation is the fact that there was least freedom of choice in the FD group (44% M, 38% F); as we shall see later in the analyses of how they spent their work time, many of these jobs involved working with clients, patients, or students--which would require more definite time scheduling, or even specific appointments, than would many other types of work activities.

Another indication of amount of independence with respect to work is the frequency with which the supervisor checked the student's work, or gave her or him new instructions or assignments. Over two-thirds of both the men and the women students had their work checked at least once a week or more often (70% M, 67% F); sex differences were slight. According to the students' reports, however, supervisors gave new instructions or assignments with differential frequency depending on the sex of the student, and with greater frequency to men; 69 percent of men, as compared with only 56 percent of the women, reported receiving new instructions or assignments at least once a week or more. One possible interpretation is that male

students' jobs are more varied, i.e., males are given more varied work; alternatively, it may be that women are actually treated as more responsible workers, needing less supervision.

A related question asked students to rate how much authority and responsibility they felt they had, compared with other workers in similar jobs (on a 3-point scale, from 1 = below average to 3 = above average). Means for all groups were at or slightly above 2.0, indicating that these students felt they had as much or a little more authority and responsibility than co-workers with similar jobs. Sex differences were small in magnitude, but generally the women felt they had slightly more authority and responsibility than the men. These differences were significant (5% level) in two instances, namely, the means were higher for All women (2.1 F, 2.0 M) and for Engineering women (2.3 F, 2.0 M).

General level of work. How did the students feel about the level of their work? On a scale from 1 (never) to 4 (often), they rated how frequently they considered each of six qualities to be descriptive of their co-op jobs (see means in Table 6, page 40). On the whole, they considered their work to be fairly often instructive and challenging, sometimes boring or uninteresting, but rarely at either too low a level or beyond their abilities, and almost never inappropriate to their sex.

On any one quality, when the sexes were compared within each analytic group, the men's and women's ratings were very similar, and few of these differences were significant. However, even though the differences were small, there were some consistent trends in the direction of the differences: Men viewed their activities as more challenging than did women, and significantly so in most groups (All and Business, 1% level; MD and NT, 5% level). A related finding is that men (except NT men) felt their work activities were beyond their abilities to a greater extent than did women (sex differences significant at 5% level for All, MD, and Business). On

TABLE 6

STUDENTS' ATTITUDES ABOUT THEIR CO-OP JOBS

| GENERAL WORK QUALITIES: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Instructive | M | 3.3 | 3.6 | 3.5 | 3.3 | 3.4 | 3.2 |
| | F | 3.3 | 3.4 | 3.2 | 3.2 | 3.3 | 3.1 |
| | M-F | +0 | +.2 | +.3$^{\Delta}$ | +.1 | +.1 | +.1 |
| Challenging | M | 3.2 | 3.2 | 3.5 | 3.2 | 3.2 | 3.2 |
| | F | 3.0 | 3.1 | 3.0 | 3.0 | 3.0 | 2.8 |
| | M-F | +.2** | +.1 | +.5* | +.2* | +.2 | +.4** |
| Boring or uninteresting | M | 2.9 | 2.6 | 2.9 | 2.9 | 2.9 | 3.0 |
| | F | 2.8 | 2.7 | 2.9 | 2.9 | 2.7 | 3.0 |
| | M-F | +.1 | -.1 | -0 | +0 | +.2$^{\Delta}$ | -0 |
| At too low a level for the job | M | 2.1 | 1.9 | 1.9 | 2.1 | 2.1 | 2.1 |
| | F | 2.0 | 1.9 | 2.2 | 2.1 | 2.0 | 2.2 |
| | M-F | +.1 | +0 | -.3 | -0 | +.1 | -.1 |
| Beyond student's abilities | M | 1.9 | 1.8 | 1.8 | 1.9 | 2.0 | 2.0 |
| | F | 1.8 | 1.7 | 1.9 | 1.7 | 1.8 | 1.7 |
| | M-F | +.1* | +.1 | -.1 | +.2* | +.2 | +.3* |
| Inappropriate to student's sex | M | 1.2 | 1.3 | 1.2 | 1.2 | 1.2 | 1.4 |
| | F | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.3 |
| | M-F | -.1 | +0 | -.1 | -.1 | -0 | +.1 |

the remaining four qualities, no sex differences were significant; nevertheless, men in every group more often regarded their work as instructive, and less often (except for men in Business) as inappropriate to their sex. The fact that men more often felt their work was challenging, beyond their abilities, and instructive could reflect simply a difference in attitudes, or it might reflect a sex difference in the actual level of their work. We will return to this question later after we examine the work activities in detail.

Workspace and equipment. To find out whether students had the same equipment as other employees in their organization with similar jobs (co-workers), we asked them whether they had each of seven specific items and whether their co-workers did. Obviously, a

particular job might not require, say, a typewriter or tools; or outdoor workers would not need telephones. A later analysis of how work time was spent (e.g., in typing, telephoning) will give that information. Here the main question of interest is whether co-op students are treated differently from their co-workers. Table 7 on the following page shows the results, in two parts: the left half indicates the percentage of students in the various analytic groups who have the item, and the right half the percentage of co-workers that students say have the item. (Table C2 in the Appendix shows the discrepancies between the students and their co-workers, as reported by students.)

Looking first at All students' equipment, in decreasing order: approximately four-fifths had their own supplies and about two-thirds had a desk. Nearly half had their own room or station and telephone; a little over a third had a typewriter or tools, locker or storage space, and keys.[1]

The only significant sex differences among the students (all of which were beyond the 1% level) were that All men more often than All women had their own desk (76% M, 58% F), telephone (50% M, 34% F), supplies (83% M, 71% F), and room or station (54% M, 42% F); and more of the MD men had their own room or station (54% M, 37% F). Also, in the Engineering group nearly twice as many men had their own room or station (62% M, 38% F; 5% level), although slightly more of the Engineering women did have their own desk (81% M, 88% F). A greater portion of Engineering women had desks of their own than any of the other five female student groups. This reversal--that Engineering women, as compared with Engineering men, less often have their own room or station but more often their own desk--may signify that these women and men

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[1]As the students' report their co-workers' equipment, this rank order was exactly the same except that for co-workers, storage space and keys were in reverse order, with storage space ranking last.

TABLE 7

STUDENT REPORTS OF THEIR OWN AND THEIR CO-WORKERS' EQUIPMENT: PERCENTAGE WHO HAVE EACH ITEM

PERCENTAGE OF STUDENTS WHO HAVE THEIR OWN EQUIPMENT

| EQUIPMENT: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Supplies | M | 83% | 56% | 77% | 84% | 87% | 81% |
| | F | 71 | 56 | 65 | 81 | 88 | 83 |
| | M-F | +12** | -0 | +12 | +3 | -1 | -2 |
| Desk | M | 76 | 44 | 69 | 79 | 81 | 82 |
| | F | 58 | 35 | 56 | 72 | 88 | 73 |
| | M-F | +18** | +9 | +13 | +7 | -7 | +9 |
| Room/station | M | 54 | 33 | 52 | 54 | 62 | 38 |
| | F | 42 | 48 | 51 | 37 | 38 | 33 |
| | M-F | +12* | -15 | +1 | +17** | +24* | +5 |
| Telephone | M | 50 | 22 | 43 | 52 | 53 | 54 |
| | F | 34 | 13 | 42 | 41 | 54 | 42 |
| | M-F | +16** | +9 | +1 | +11$^{\Delta}$ | -1 | +12 |
| Typewriter/ tools | M | 37 | 33 | 31 | 39 | 41 | 41 |
| | F | 38 | 29 | 30 | 46 | 42 | 52 |
| | M-F | -1 | +4 | +1 | -7 | -1 | -11 |
| Locker/ storage space | M | 35 | 33 | 44 | 34 | 40 | 22 |
| | F | 41 | 52 | 50 | 30 | 39 | 27 |
| | M-F | -6 | -19 | -6 | +4 | +1 | -5 |
| Keys | M | 35 | 22 | 41 | 35 | 36 | 21 |
| | F | 33 | 34 | 32 | 33 | 21 | 37 |
| | M-F | +2 | -12 | +9 | +2 | +15 | -16$^{\Delta}$ |

PERCENTAGE OF COWORKERS WHO HAVE THEIR OWN EQUIPMENT, AS REPORTED BY STUDENTS

| EQUIPMENT: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Supplies | M | 85% | 56% | 75% | 87% | 90% | 85% |
| | F | 72 | 59 | 65 | 82 | 92 | 82 |
| | M-F | +13** | -3 | +10 | +5 | -2 | +3 |
| Desk | M | 82 | 44 | 78 | 84 | 88 | 85 |
| | F | 62 | 39 | 59 | 76 | 92 | 78 |
| | M-F | +20** | +5 | +19 | +8$^{\Delta}$ | -4 | +7 |
| Room/station | M | 56 | 33 | 50 | 57 | 64 | 41 |
| | F | 44 | 47 | 50 | 39 | 33 | 39 |
| | M-F | +12** | -14 | 0 | +18** | +31** | +2 |
| Telephone | M | 59 | 22 | 53 | 61 | 64 | 55 |
| | F | 41 | 20 | 51 | 49 | 58 | 56 |
| | M-F | +18** | +2 | +2 | +12* | +6 | -1 |
| Typewriter/ tools | M | 49 | 33 | 41 | 50 | 54 | 51 |
| | F | 47 | 37 | 46 | 54 | 50 | 70 |
| | M-F | +2 | -4 | -5 | -4 | +4 | -19* |
| Locker/ storage space | M | 41 | 44 | 48 | 40 | 45 | 24 |
| | F | 47 | 61 | 56 | 35 | 43 | 28 |
| | M-F | -6 | -17 | -8 | +5 | +2 | -4 |
| Keys | M | 48 | 44 | 48 | 48 | 51 | 36 |
| | F | 45 | 40 | 48 | 46 | 29 | 50 |
| | M-F | +3 | +4 | +0 | +2 | +22$^{\Delta}$ | -14 |

perform different work activities, with different equipment needs--a hypothesis we can examine later; however, we have already seen that their job titles are very similar. A more likely explanation is that the relative rarity of women in Engineering leads their supervisors to treat them differently--giving them their own desk if possible, rather than putting them at a work space in a large room where mostly men work.

The general tendency, then, is that in all groups analyzed, proportionately more of the male than of the female students have each item of equipment.[1] One other overall trend is notable: FD students, both male and female, tend to have proportionately less of almost every item than the other groups--especially telephones. The exceptions are that FD women are more apt than women in the other groups to have their own locker or storage space, and room or station. (Results for FD men are not reliable enough for generalizations.) This finding fits the kinds of jobs FD students have; for example, it seems reasonable that beginners who assist in nursing, physical therapy, education, etc., would need a room or station, but would have less need of a telephone or desk that is solely theirs than would be the case with beginners in some other jobs, such as secretarial or accounting assistants.

The findings for students' reports on their co-workers are shown in the right half of Table 7. It is no surprise to find that, in comparing results for students and co-workers in any one group, for almost every item students say their co-workers have more of it than they do; 86 percent of these comparisons favor the co-workers, and the remaining 14 percent are close to zero (see Appendix, Table C2). Another striking consistency is that male and female students attribute almost <u>equal</u> amounts of advantage (in terms of having these items of equipment) to their co-workers, with the result that the magnitude of the difference

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[1]The left half of Table 7 shows 42 (6 x 7) male-female differences; 62 percent of these are positive--i.e., favor the male students.

between male and female students is generally about the same as that found in the male and female students' reports of their co-workers. For example, 76 percent of All men had their own desk and said 82 percent of their co-workers did, while 58 percent of All women had a desk and said 62 percent of their co-workers did. This consistency can be seen by comparing levels of significance of corresponding sex differences in the two halves of Table 7--any sex difference that was significant for students' equipment was also significant for students' reports of their co-workers' equipment; and the nonsignificant differences are mostly parallel in amount for students and co-workers. In interpreting this pattern, one point needs emphasis: Each student had, or is presumed to have had, a <u>different set</u> of co-workers, and the students made these estimates <u>whatever</u> the sex of their co-workers. Although we don't know the sexes of the co-workers, it is likely that the male students would have more male co-workers--especially considering that most of our students (about 70%) are in male-dominated areas--and that the female students would have more female co-workers for the same reason. The very fact that the male-female pattern was so markedly consistent among students and co-workers suggests strongly that these differences are characteristic of the way men and women workers (at least in these places of employment) are treated with respect to the space and equipment items examined here. Two other suppositions can be made from these same data: One is that men's and women's jobs (with the employers represented here) differ sufficiently enough that the men generally <u>need</u> more equipment; such job differences themselves, however, suggest sex stereotyping. Alternatively, the fact that more male than female students have items of space and equipment of their own may be another instance of the "more male" phonomenon that characterizes a large part of our findings. Whatever the interpretation, it is clear that regular employees generally have more of these items than do co-op student workers.

Interpersonal relations. Another series of questions dealt with the students' interpersonal relations at work--the name by which the student was called, the amount of socializing, personal inquiries directed to the student, and so on. The students rated how often (on a 3-point scale) supervisory level persons performed each action. They also checked (yes-no) whether they do or would object to the action. The results appear in Table 8 on the following page; the left half shows the mean frequency ratings, and the right half shows the percentage of students who say they do or would object.

The first five items, listed in decreasing order, show what name supervisors used for the students. Nearly all students were addressed at work by their first name, regardless of their sex. The other forms of address were much less frequent. The women were a little more likely to be called by a nickname or an endearing name; the men were more likely to be called by their last name--especially their last name without a title.

The remaining six items deal with social interactions at work. The students were fairly often included in socializing with co-workers at work--and the women a little more so than the men. Neither the men nor the women did very much socializing with co-workers after work. Supervisors sometimes asked students about their school experiences; this was a little more true of women students than of men. It was less common for supervisors to ask the students about their personal life, or to ask them to do favors for co-workers or supervisors. Very few of the sex differences on these interaction items are significant; nevertheless, one consistent trend is that men students report that they are more often asked to do favors for both co-workers and supervisors. Why? Are these favors sex-related?--e.g., do they involve lifting, carrying, hammering? Or is it just that three-fourths of the supervisors are male, and tend to ask favors of

TABLE 8

INTERPERSONAL RELATIONS AT WORK: STUDENT REPORTS ON SUPERVISORY ACTIONS

MEAN FREQUENCY RATINGS

| NAME USED FOR STUDENT | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| First name | M | 2.9 | 3.0 | 2.9 | 2.9 | 2.9 | 2.9 |
| | F | 2.9 | 2.8 | 3.0 | 3.0 | 2.9 | 3.0 |
| | M-F | +0 | +.2 | -.1 | -.1 | +0 | -.1 |
| Nickname | M | 1.5 | 1.4 | 1.5 | 1.5 | 1.6 | 1.4 |
| | F | 1.6 | 1.7 | 1.5 | 1.6 | 1.7 | 1.6 |
| | M-F | -.1 | -.3 | +0 | -.1 | -.1 | -.2 |
| Last name with title | M | 1.4 | 1.4 | 1.3 | 1.4 | 1.4 | 1.4 |
| | F | 1.3 | 1.5 | 1.2 | 1.2 | 1.2 | 1.3 |
| | M-F | +.1 | -.1 | +.1 | +.2* | +.2 | +.1 |
| Endearing name | M | 1.2 | 1.4 | 1.3 | 1.2 | 1.2 | 1.2 |
| | F | 1.3 | 1.2 | 1.4 | 1.3 | 1.2 | 1.2 |
| | M-F | -.1* | +.2 | -.1 | -.1* | -0 | -0 |
| Last name without title | M | 1.2 | 1.3 | 1.2 | 1.2 | 1.2 | 1.2 |
| | F | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| | M-F | +.1** | +.2△ | +.1 | +.1△ | +.1 | +.1 |
| INTERACTIONS SUPS. ASK OR INCLUDE S: | | | | | | | |
| In soclzg w/ co-workers at work | M | 2.3 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.5 | 2.3 | 2.4 | 2.3 | 2.2 |
| | M-F | -.1* | -.3 | -0 | -.1 | -0 | +.2 |
| In soclzg w/ co-workers after work | M | 1.8 | 2.0 | 1.8 | 1.7 | 1.7 | 1.7 |
| | F | 1.8 | 1.8 | 1.8 | 1.7 | 1.6 | 1.7 |
| | M-F | -0 | +.2 | -0 | +0 | +.1 | +0 |
| About school experiences | M | 2.1 | 2.2 | 2.0 | 2.1 | 2.1 | 2.1 |
| | F | 2.2 | 2.3 | 2.2 | 2.1 | 2.2 | 2.2 |
| | M-F | -.1* | -.1 | -.2 | -0 | -.1 | -.1 |
| About personal life | M | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 |
| | F | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.9 |
| | M-F | -0 | +.1 | -0 | +0 | +.1 | +0 |
| To do favors for co-wkrs. | M | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.9 |
| | F | 1.8 | 1.9 | 1.8 | 1.7 | 1.7 | 1.7 |
| | M-F | +0 | +.1 | +0 | +.1△ | +.1 | +.2* |
| To do favors for supervisors | M | 1.8 | 2.0 | 1.9 | 1.8 | 1.8 | 2.0 |
| | F | 1.8 | 2.0 | 1.9 | 1.7△ | 1.6 | 1.7 |
| | M-F | +0 | -0 | +0 | +.1 | +.2 | +.3** |

PERCENTAGE OBJECTING TO ACTION

| NAME USED FOR STUDENT | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| First name | M | 1% | 0% | 0% | 1% | 1% | 1% |
| | F | 3 | 5 | 0 | 3 | 8 | 2 |
| | M-F | -2 | -5 | [NA] | -2 | -7 | -1 |
| Nickname | M | 14 | 0 | 29 | 12 | 7 | 21 |
| | F | 15 | 12 | 16 | 16 | 0 | 18 |
| | M-F | -1 | -12 | +13 | -4 | +7 | +3 |
| Last name with title | M | 10 | 11 | 15 | 9 | 8 | 11 |
| | F | 17 | 19 | 12 | 16 | 25 | 6 |
| | M-F | -7* | -8 | +3 | -7△ | -17* | +5 |
| Endearing name | M | 31 | 14 | 30 | 32 | 30 | 30 |
| | F | 47 | 47 | 34 | 50 | 50 | 51 |
| | M-F | -16** | -33 | -4 | -18** | -20△ | -21* |
| Last name without title | M | 35 | 56 | 45 | 32 | 32 | 31 |
| | F | 50 | 61 | 40 | 47 | 38 | 50 |
| | M-F | -15** | -5 | +5 | -15** | -6 | -19* |
| INTERACTIONS SUPS. ASK OR INCLUDE S: | | | | | | | |
| In soclzg w/ co-workers at work | M | 3 | 0 | 3 | 3 | 3 | 1 |
| | F | 5 | 6 | 0 | 6 | 8 | 8 |
| | M-F | -2 | -6 | +3 | -3 | -5 | -7 |
| In soclzg w/ co-workers after work | M | 4 | 0 | 6 | 4 | 3 | 4 |
| | F | 7 | 8 | 9 | 6 | 4 | 6 |
| | M-F | -3 | -8 | -3 | -2 | -1 | -2 |
| About school experiences | M | 1 | 0 | 0 | 2 | 1 | 3 |
| | F | 2 | 3 | 0 | 2 | 4 | 2 |
| | M-F | -1 | -3 | [NA] | -0 | -3 | +1 |
| About personal life | M | 10 | 0 | 3 | 11 | 12 | 10 |
| | F | 19 | 19 | 19 | 20 | 12 | 18 |
| | M-F | -9** | -19 | -16△ | -9* | 0 | -8 |
| To do favors for co-wkrs. | M | 6 | 0 | 6 | 6 | 5 | 8 |
| | F | 8 | 8 | 5 | 10 | 0 | 12 |
| | M-F | -2 | -8 | +1 | -4 | +5 | -4 |
| To do favors for supervisors | M | 6 | 0 | 9 | 5 | 5 | 8 |
| | F | 8 | 8 | 2 | 11 | 0 | 14 |
| | M-F | -2 | -8 | +7 | -6△ | +5 | -6 |

members of their own sex? Or is it again a perceptual difference in the reports of male and female students? Unfortunately, the data permits us merely to raise these questions.

What objections do or would the students have to any of these supervisory actions? In the right half of Table 8 we see that the only appreciable objections arose in connection with forms of address. Almost no one had any objection to being called by their first name--which was the most common practice. There was a little more objection to being addressed by last name preceeded by a title, or by a nickname, and much objection to use of any endearing name, or last name without a title. As we saw, supervisors rarely used these latter four forms of address. Wherever there was a significant sex difference, it was the women who raised more objections than the men. In every group, more women objected to use of an endearing name, and significantly so for All women and MD women (1% level), and women in Business (5% level). Half of All women would object to being called by their last name without a title (1% level), although supervisors almost never did this. The latter two items are to some extent sex-stereotyped; at least in the past, a boss (of either sex) might use "honey" or "dear" to address a female employee, but would probably <u>not</u> say anything comparable to a male employee. Among men, however, whether employees or friends, the use of the last name alone is relatively common. While these female college students reject the use of endearing names, they have not yet accepted the common male practice with respect to being addressed by their last name alone.

Turning next to an examination of objections involving the personal interaction items, students raised little objection to any of these items except when it came to being asked about their personal life. To this item, while the percentages objecting were not great, proportionately many more women than men objected, and significantly more women would do so in some groups (All, 0.3% level; MD, 5% level; NT, 8% level). One interesting exception

is that the proportion of Engineering women objecting (12%) was exactly the same as for Engineering men, and this was clearly lower than the proportion in the other groups (which ranged from 18% to 20%).

Since the questionnaire asked, "Do you or would you object?" to each of the actions, we wondered whether the students' objections were actual, or merely hypothetical; we therefore did a cross-tabulation of student ratings of supervisor actions (never, sometimes, often) and objections (yes-no). While the low frequency of objections makes the data somewhat unreliable, the results suggest that generally the students who objected to a given supervisory action had not been recipients of that action; that is, they were mostly saying they would object if it did happen--but mostly it had not occurred.

A related set of items asked how much encouragement the student received from people at work.[1] Table 9 shows the results. Students

TABLE 9

DEGREE OF ENCOURAGEMENT THE STUDENT RECEIVES FOR VARIOUS TYPES OF ACTIONS ON THE JOB, FROM PEOPLE THE STUDENT WORKS FOR

| STUDENT ENCOURAGED TO: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Ask questions about work | M | 2.6 | 2.7 | 2.6 | 2.6 | 2.7 | 2.5 |
| | F | 2.6 | 2.5 | 2.5 | 2.7 | 2.9 | 2.7 |
| | M-F | +.0 | +.2 | +.1 | -.1 | -.2* | -.2Δ |
| Offer own opinions and suggestions | M | 2.3 | 2.3 | 2.5 | 2.3 | 2.3 | 2.3 |
| | F | 2.3 | 2.3 | 2.4 | 2.2 | 2.2 | 2.2 |
| | M-F | +.0 | -.0 | +.1 | +.1 | +.1 | +.1 |
| Make independent decisions about work | M | 2.3 | 2.2 | 2.5 | 2.2 | 2.3 | 2.2 |
| | F | 2.3 | 2.4 | 2.3 | 2.2 | 2.2 | 2.2 |
| | M-F | -.0 | -.2 | +.2 | +.0 | +.1 | -.0 |
| Ask about future employment in the co | M | 1.9 | 1.8 | 1.9 | 1.9 | 1.9 | 2.0 |
| | F | 1.9 | 1.9 | 1.9 | 2.0 | 2.2 | 2.0 |
| | M-F | -.0 | -.1 | +.0 | -.1 | -.3* | +.0 |
| Ask for general advice about careers | M | 1.8 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 |
| | F | 1.9 | 1.9 | 2.0 | 1.9 | 2.0 | 1.8 |
| | M-F | -.1 | +.1 | -.1 | -.1 | -.2 | +.0 |
| Ask for advice about school | M | 1.6 | 1.6 | 1.9 | 1.6 | 1.6 | 1.5 |
| | F | 1.7 | 1.9 | 1.6 | 1.8 | 1.9 | 1.7 |
| | M-F | -.1* | -.3 | +.3 | -.2** | -.3* | -.2 |
| Talk about own personal problems | M | 1.5 | 2.0 | 1.5 | 1.5 | 1.5 | 1.4 |
| | F | 1.6 | 1.8 | 1.7 | 1.5 | 1.5 | 1.6 |
| | M-F | -.1** | +.2 | -.2 | -.0 | +.0 | -.2Δ |

[1]Students used a 3-point rating scale: 1 = little or no encouragement; 2 = some encouragement; 3 = greatly encouraged.

reported that they received much encouragement to ask questions about work, with Engineering women reporting more (mean 2.9) than any other group, and significantly more (5% level) than the Engineering men. Students also received fairly much encouragement when it came to offering their own opinions and suggestions, and to making independent decisions. In these two respects there were no significant differences in the treatment reported by men and women; however, the men (except FD men) generally felt more encouraged than the women to offer opinions and suggestions.

On the last four items the students reported receiving less encouragement, with means generally below 2.0, or "some"; these items are: asking about future employment in the company, asking for general advice about careers and about school, and talking about the student's own personal problems. In terms of sex differences on these four items, the women generally felt more encouraged to ask or talk about these things than the men. With respect to asking about future employment in the company, the mean of 2.2 for Engineering women was higher than in any other group, male or female, and significantly higher (5% level) than for Engineering men. In asking for advice about school, women (except NT women) felt more encouraged than men, and several sex differences were significant (All, 5% level; MD, 1% level; Engineering, 5% level). All women felt more encouraged (1% level) to talk about their personal problems than did All men--a finding that accords with the previously noted tendency for women to seem less reluctant than men to report having personal problems. The result that All women felt more encouraged to talk about their personal problems at work seems at odds with the finding that generally many more women than men do or would object to being asked about their "personal life": Perhaps the wording of these items is responsible for this apparent contradiction--"asking about your personal life" may connote to the student more intrusive, "nosy" questions than the phrase "talking about your personal problems."

Rules and regulations. Two questions asked about degree of compliance with work rules and policies, and how much trouble the students--as compared with their average co-workers--could expect if they did not comply (rated from 1 = below average, to 3 = above average in relation to the co-workers.) Means for all analytic groups ranged from 2.2 to 2.4, indicating that these students felt they complied with work rules somewhat more than their co-workers. Women students felt they complied slightly more than men, although the difference was significant only when All women were compared with All men (2.3 F, 2.2 M; 5% level). Student predictions of what would happen if they did not comply yielded means for all groups of 2.0 or 1.9; that is, they would expect no more, or slightly less, trouble than would be true for their co-workers. Women, who (as we just saw) felt they complied better than men, also would expect slightly less trouble as a result of non-compliance with work rules; however, no sex differences were significant.

Both the students and their supervisors answered other, more detailed questions about work activities and behaviors which either directly or by inference involve work rules and policies, such as time spent making personal phone calls, arriving late for work, etc. These more detailed results will be presented after the following section, which discusses the activities of the typical work day--as viewed by the students and by the supervisors.

## The Typical Day At Work: Students' Views of Places and Persons

How did the students spend their time at work? The Log ratings (as mentioned earlier) tell where they were, with whom, and what they did (locations, persons, and activities, respectively), as well as their views of the appropriateness of the activities in which they engaged on a typical day. Additional information on the students' daily activities comes from the

Questionnaire, on which the information is slightly different: there students checked each activity (yes-no), not simply for one day, but whether they did it "more than just once or twice" during the whole time of employment. Then they checked, for each activity, how well they performed or could perform it (very well-not very well). Supervisors also rated students' performance on work activities: Whether each listed activity was not performed (not applicable), or, if performed, whether the student was below average (1), average (2), or above average (3) as compared with the usual regular employee in that job.

Our discussion of students' views of work and social time with respect to locations and persons is based mainly on the Log. The discussion of work activities (in the next section) is also based mainly on the Log, but will be supplemented with information from the other instruments when that information differs from the Log. The lists of activities on the three instruments are not identical, but there is a great deal of overlap, so we will not present information from the other instruments if it is repetitive or merely corroborative of that from the Log. Also, certain personal activities have been separated for later presentation in conjunction with closely related items from the Questionnaire and the Supervisor's form.

Students indicated how they spent their work time on Log Day using a 5-point scale, as follows: 1 = none of my time, 2 = very little, 3 = some, 4 = most, 5 = almost all of my time. In this year's expanded lists of locations, persons, and activities, even though the items are still intended to be generic, the lists are fairly long and detailed (23 locations, 14 types of persons, and 46 activities--plus "Others" written in by students). Thus only a portion of the items applies to any one job, and this fact leads to a pile-up of scores of 1 ("none of my time") when we look at group aggregates or means, with ensuing statistical problems. This extreme skewness is inherent--not just an accident of the sampling. We did calculate

means of the scores from 1 to 5 and t tests of the male-female differences, but the vast majority of these means are lower than 2.0 (i.e., are between "none" and "very little" time); for this reason these scores are not very enlightening. Even where the small differences are "significant," their meaning is dubious because of departures from the necessary conditions of normal distribution and homogeneous variances.

Our twofold approach to the Log data avoids or at least minimizes these problems. First we will examine the proportion of students who spent any of their work day with the specified locations, persons, and activities (scores of 1 vs. scores of 2 to 5). That is, what are the most common and least common places, people, and tasks with which the students were engaged? The second question is to ask, for those students who spent any time on the given item (had scores between 2 and 5), how much time did they spend?

We will also discuss the results showing where and with whom the students spent their rest or social time, their views of the appropriateness of their activities, and of their capability in performing them. Comparisons with similar information from the Questionnaire and Supervisor's form will be included where it is relevant. (The results from those two instruments differ slightly from the Log in a systematic way: they show only the proportions of students who spent some time, but not how much time; and they usually yield higher percentages than the Log because the activity ratings on them covered a longer period of time than just one specific day.)

Locations: Some vs. no work time. Where did the students spend their time on Log Day? Table 10 on the following page shows, for the separate groups, the percentage who spent some time (no matter how little or much) in each of the listed locations. The items are listed in decreasing order of frequency for the Entire group. (All Men + All Women.)[1]

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[1]All subsequent lists of data pertaining to locations will retain this same order. The tables of data for persons and activities will be presented similarly.

TABLE 10

LOCATIONS WHERE STUDENTS SPENT SOME WORK TIME ON LOG DAY
(PERCENTAGE OF STUDENTS PRESENT IN EACH LOCATION)

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Walking | M | 96% | 91% | 96% | 96% | 96% | 94% |
| | F | 96 | 97 | 94 | 97 | 94 | 99 |
| | M-F | -0 | -6 | +2 | -1 | +2 | -5 |
| Your own office, station or desk | M | 88 | 50 | 73 | 92 | 91 | 93 |
| | F | 75 | 63 | 65 | 85 | 94 | 85 |
| | M-F | +13** | -13 | +8 | +7* | -3 | +8$^{\Delta}$ |
| Employee lounge, restroom | M | 76 | 100 | 76 | 75 | 80 | 74 |
| | F | 78 | 81 | 69 | 80 | 94 | 77 |
| | M-F | -2 | +19 | +7 | -5 | -14$^{\Delta}$ | -3 |
| Supervisor's office or station | M | 77 | 56 | 73 | 78 | 78 | 84 |
| | F | 70 | 62 | 70 | 76 | 79 | 81 |
| | M-F | +7$^{\Delta}$ | -6 | +3 | +2 | -1 | +3 |
| Cafeteria, restaurant, kitchen | M | 61 | 70 | 56 | 61 | 59 | 68 |
| | F | 69 | 73 | 77 | 64 | 66 | 67 |
| | M-F | -8* | -3 | -21* | -3 | -7 | +1 |
| General office or secretarial area | M | 63 | 70 | 54 | 64 | 60 | 80 |
| | F | 64 | 56 | 65 | 68 | 58 | 39 |
| | M-F | -1 | +14 | -11 | -4 | +2 | +41** |
| Traveling to other destinations | M | 58 | 55 | 56 | 58 | 59 | 57 |
| | F | 53 | 45 | 64 | 52 | 52 | 43 |
| | M-F | +5 | +10 | +8 | +6 | +7 | +14$^{\Delta}$ |
| Duplicating or Xerox room | M | 58 | 40 | 41 | 60 | 59 | 75 |
| | F | 44 | 19 | 37 | 58 | 64 | 68 |
| | M-F | +14** | +21 | +4 | +2 | -5 | +7 |
| Stockroom, storeroom, supply room | M | 43 | 80 | 45 | 42 | 38 | 53 |
| | F | 44 | 60 | 47 | 36 | 39 | 35 |
| | M-F | -1 | +20 | -2 | +6 | -1 | +18* |
| Outdoors | M | 42 | 33 | 40 | 42 | 47 | 34 |
| | F | 37 | 29 | 37 | 40 | 52 | 59 |
| | M-F | +5 | +4 | +3 | +2 | -5 | +5 |
| Other private office | M | 42 | 30 | 28 | 45 | 46 | 51 |
| | F | 31 | 23 | 25 | 39 | 45 | 39 |
| | M-F | +11** | +7 | +3 | +6 | +1 | +12 |
| Conference or meeting room | M | 35 | 55 | 38 | 35 | 27 | 45 |
| | F | 35 | 39 | 44 | 30 | 36 | 27 |
| | M-F | +0 | +16 | -6 | +5 | -7 | +18* |

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Computer or keypunch room | M | 30% | 9% | 12% | 33% | 32% | 34% |
| | F | 16 | 5 | 13 | 23 | 24 | 21 |
| | M-F | +14** | +4 | -1 | +10* | +8 | +13$^{\Delta}$ |
| Reception area, waiting room | M | 19 | 67 | 33 | 16 | 4 | 33 |
| | F | 27 | 37 | 24 | 21 | 15 | 20 |
| | M-F | -8* | +30 | +9 | -5 | -11* | +13$^{\Delta}$ |
| Laboratory | M | 23 | 10 | 25 | 22 | 32 | 10 |
| | F | 15 | 22 | 14 | 13 | 30 | 4 |
| | M-F | +8* | -12 | +11 | +9* | +2 | +6 |
| Library | M | 18 | 20 | 39 | 14 | 14 | 14 |
| | F | 20 | 19 | 26 | 20 | 21 | 20 |
| | M-F | -2 | +1 | +13 | -6 | -7 | -6 |
| Post Office, bank, UPS (on errand) | M | 18 | 20 | 27 | 16 | 9 | 27 |
| | F | 19 | 19 | 16 | 20 | 12 | 21 |
| | M-F | -1 | +1 | +11 | -4 | -3 | +6 |
| Mail room | M | 18 | 27 | 25 | 36 | 11 | 28 |
| | F | 17 | 13 | 17 | 18 | 12 | 19 |
| | M-F | +1 | +14 | +8 | +18 | -1 | +9 |
| Classroom | M | 9 | 36 | 12 | 7 | 4 | 10 |
| | F | 18 | 38 | 23 | 5 | 0 | 5 |
| | M-F | -9** | -2 | -11 | +2 | +4 | +5 |
| Selling floor | M | 8 | 27 | 4 | 8 | 1 | 23 |
| | F | 11 | 5 | 17 | 12 | 6 | 15 |
| | M-F | -3 | +22$^{\Delta}$ | -13$^{\Delta}$ | -4 | -5 | +8 |
| Assembly line | M | 11 | 0 | 4 | 13 | 17 | 10 |
| | F | 6 | 6 | 2 | 9 | 12 | 10 |
| | M-F | +5* | -6 | +2 | +4 | +5 | +0 |
| Patient's hospital room | M | 4 | 10 | 17 | 2 | 1 | 3 |
| | F | 14 | 38 | 10 | 3 | 0 | 4 |
| | M-F | -10** | -28 | +7 | -1 | +1 | -1 |
| Greenhouse | M | 1 | 0 | 2 | 1 | 0 | 1 |
| | F | 3 | 3 | 5 | 1 | 3 | 0 |
| | M-F | -2$^{\Delta}$ | -3 | -3 | -0 | -3 | +1 |

Nearly every student did some walking during the day, which certainly accords with common work experience. And as would be expected, many also were in restaurant and lounge areas. (Note, however, that being in a restaurant or kitchen might be for the purpose of eating, but for some students this might be a primary work area. Students might be present in some other particular location for differing purposes; or two different locations could involve the same purpose. For example, a student might attend a meeting in either a "conference or meeting room" or a "classroom.") Most students spent some time at their own work station or in a general office area, and in their supervisor's office. Over a third visited another private office and a meeting room. About half the students reported being (at some time) in the duplicating room and the supply room, as well as traveling to other destinations and being outdoors. The remaining locations were relatively uncommon; fewer than 10 percent of the students were on an assembly line, in a patient's hospital room, or in a greenhouse.

Against this overall background, we can examine sex differences. For some locations there were no significant sex differences: Equal proportions of men and women in every group reported walking, going on an outside errand, being outdoors, and being in a library and a mail room. Next, inspecting the significant differences for All students, All men differed from All women in that more of the men spent time at their own desk or work station (agreeing with results from the Questionnaire), their supervisor's office, another private office, a duplicating room, computer or keypunch room, lab, and assembly line; but more of All women were in a restaurant area, classroom, reception area, patient's hospital room, and greenhouse. In the other groups, few sex differences were significant: In the MD group, more of the men reported being at their own work station (again in agreement with Questionnaire results), in a computer or keypunch room, and lab. The men and women in the NT group did not differ significantly with respect to any location except one: more of NT women were in a restaurant area; however, since the NT men and women

had equal scores on "meal breaks" (see discussion of activities below), this result must reflect differences in their jobs. More of the NT women were also in a classroom, although this difference was not significant. In the FD group, the women did not differ significantly from the men on any item (perhaps because there were so few FD men); however, a much larger proportion of the FD women were in a patient's hospital room, as would be expected from what we know of their jobs. Neither did the men and women in Engineering differ, except that more of the women said they were in a reception area. In the Business group, more of the men reported being in a general office area or at their own work station, and in a meeting room and supply room.

Locations: Amount of work time. For students who spent any time at all in a given location on Log Day, how much time did they spend? Table 11 (page 56) shows the results.[1] Here the lowest possible mean is 2.0, or "very little time" and a great many of the mean scores are at this low end of the scale (i.e., are below 3.0). The students spent the most time at their own work station. Next, in decreasing order for the Entire group, were a classroom (a result of the great amount of time spent there by the NT and FD women), lab, selling floor, patient's hospital room, computer or keypunch room, and a general office area. Overall, students spent the least time in the employee lounge, and very little time in the mail room, supply room, duplicating room, on outside errands, and in a restaurant area.

In every group, the men and women who were present at all in many locations spent equal time in them; that is, no sex differences were significant in any group (or else reached only the 10% confidence level) for the following locations: their own work station, general office area, the supervisor's office, another private office, the

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[1]Since these means are only for those students who spent some work time in the location, they are based on smaller Ns than are the percentages in Table 10 (page 53). This same consideration will also apply to the two similar tables for persons and activities, and to student ratings of appropriateness, which are presented only for those who performed activities.

TABLE 11

LOCATIONS: MEAN AMOUNT OF WORK TIME SPENT ON LOG DAY
(BY STUDENTS PRESENT AT SOME TIME IN THE LOCATION)

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Walking | M | 2.6 | 3.0 | 2.7 | 2.6 | 2.5 | 2.7 |
| | F | 2.8 | 3.1 | 2.8 | 2.7 | 2.7 | 2.6 |
| | M-F | -.2** | -.1 | -.1 | -.1 | -.2△ | +.1 |
| Your own office, station or desk | M | 4.0 | 3.6 | 3.7 | 4.0 | 4.0 | 4.3 |
| | F | 4.1 | 3.6 | 4.0 | 4.2△ | 3.9 | 4.6△ |
| | M-F | -.1 | -0 | -.3 | -.2△ | +.1 | -.3△ |
| Employee lounge, restroom | M | 2.1 | 2.3 | 2.1 | 2.1 | 2.0 | 2.1 |
| | F | 2.1 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 |
| | M-F | -0 | +.1 | -.1 | +0 | -.1 | +0 |
| Supervisor's office or station | M | 2.6 | 3.0 | 2.6 | 2.6 | 2.5 | 2.8 |
| | F | 2.6 | 2.6 | 2.8 | 2.6 | 2.5 | 2.6 |
| | M-F | -0 | +.4 | -.2 | -0 | +0 | +.2 |
| Cafeteria, restaurant, kitchen | M | 2.3 | 2.6 | 2.4 | 2.2 | 2.2 | 2.3 |
| | F | 2.4 | 2.5 | 2.4 | 2.3 | 2.2 | 2.4 |
| | M-F | -.1* | +.1 | -0 | -.1 | -0 | -.1 |
| General office or secretarial area | M | 2.9 | 2.3 | 2.8 | 3.0 | 2.6 | 3.5 |
| | F | 3.1 | 3.1△ | 3.1 | 3.1 | 2.6 | 3.5 |
| | M-F | -.2△ | -.8△ | -.3 | -.1 | +0 | +0 |
| Traveling to other destinations | M | 2.5 | 2.8 | 2.6 | 2.5 | 2.3 | 2.5 |
| | F | 2.6 | 2.7 | 2.6 | 2.7 | 2.5 | 2.6 |
| | M-F | -.1* | +.1 | +0 | -.2* | -.2 | -.1 |
| Duplicating or Xerox room | M | 2.3 | 2.8 | 2.4 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.5 | 2.5 | 2.4 | 2.3 | 2.5 |
| | M-F | -.1 | +.3 | -.1 | -.1 | -0 | -.1 |
| Stockroom, storeroom, supply room | M | 2.2 | 2.1 | 2.1 | 2.3 | 2.1 | 2.4 |
| | F | 2.4 | 2.4 | 2.5 | 2.2 | 2.4△ | 2.2 |
| | M-F | -.2* | -.3 | -.4** | +.1 | -.3△ | +.2 |
| Outdoors | M | 2.7 | 2.3 | 2.7 | 2.7 | 2.6 | 2.2 |
| | F | 2.8 | 2.6 | 2.6 | 2.9 | 2.8 | 2.4 |
| | M-F | -.1 | -.3 | +.1 | -.2 | -.2 | -.2 |
| Other private office | M | 2.4 | 2.7 | 2.3 | 2.4 | 2.4 | 2.5 |
| | F | 2.3 | 2.2 | 2.5 | 2.4 | 2.5 | 2.4 |
| | M-F | +.1 | +.5 | -.2 | +0 | -.1 | +.1 |
| Conference or meeting room | M | 2.4 | 2.8 | 2.8 | 2.3 | 2.3 | 2.4 |
| | F | 2.6 | 2.6 | 2.8 | 2.5△ | 2.3 | 2.6 |
| | M-F | -.2* | +.2 | +0 | -.2△ | -0 | -.2 |

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Computer or keypunch room | M | 3.0 | -- | 2.5 | 3.0 | 2.8 | 2.8 |
| | F | 3.3 | 3.5 | 3.4 | 3.3 | 3.1 | 3.4 |
| | M-F | -.3△ | [NA] | -.9△ | -.3 | -.3 | -.6* |
| Reception area, waiting room | M | 2.5 | 2.3 | 2.7 | 2.4 | 2.0 | 2.3 |
| | F | 2.4 | 2.4 | 2.5 | 2.4 | 2.0 | 2.3 |
| | M-F | +.1 | -.1 | +.2 | -0 | -0 | +0 |
| Laboratory | M | 3.4 | -- | 3.4 | 3.5 | 3.6 | 2.0 |
| | F | 3.3 | 3.0 | 3.2 | 3.7 | 3.7 | 2.0 |
| | M-F | +.1 | [NA] | +.2 | -.2 | -.1 | 0 |
| Library | M | 2.5 | 2.0 | 2.6 | 2.5 | 2.5 | 2.3 |
| | F | 2.6 | 2.4 | 2.9 | 2.4 | 2.3 | 2.3 |
| | M-F | -.1 | -.4 | -.3 | +.1 | +.2 | 0 |
| Post Office, bank, UPS (on errand) | M | 2.3 | 2.5 | 2.5 | 2.3 | 2.1 | 2.4 |
| | F | 2.4 | 2.2 | 2.4 | 2.4 | 2.5 | 2.4 |
| | M-F | -.1 | +.3 | +.1 | -.1 | -.4 | -0 |
| Mail room | M | 2.2 | 2.3 | 2.3 | 2.2 | 2.1 | 2.2 |
| | F | 2.4 | 2.3 | 2.6 | 2.4 | 3.0 | 2.1 |
| | M-F | -.2 | +0 | -.3 | -.2 | -.9** | +.1 |
| Classroom | M | 3.1 | 4.2 | 3.3 | 2.8 | 2.7 | 2.5 |
| | F | 3.6 | 3.8 | 3.7 | 2.9 | -- | 3.0 |
| | M-F | -.5* | +.4 | -.4 | -.1 | [NA] | -.5 |
| Selling floor | M | 3.3 | 2.7 | 3.5 | 3.4 | 2.0 | 3.5 |
| | F | 3.4 | 3.2 | 3.4 | 3.5 | 2.5 | 3.8 |
| | M-F | -.1 | -.5 | +.1 | -.1 | -.5 | -.3 |
| Assembly line | M | 2.8 | -- | 3.5 | 2.7 | 2.8 | 2.7 |
| | F | 3.2 | 3.0 | -- | 3.2 | 3.8 | 2.9 |
| | M-F | -.4 | [NA] | [NA] | -.5 | -1.0△ | -.2 |
| Patient's hospital room | M | 2.7 | -- | 3.1 | 2.3 | 2.0 | 2.0 |
| | F | 3.5 | 3.7 | 3.5 | 2.5 | -- | 2.3 |
| | M-F | -.8** | [NA] | -.4 | -.2 | [NA] | -.3 |
| Greenhouse | M | 2.7 | -- | -- | 2.0 | -- | -- |
| | F | 2.9 | 2.0 | 2.7 | 4.5 | -- | -- |
| | M-F | -.2 | [NA] | [NA] | -2.5* | [NA] | [NA] |

lounge, outdoors, on outside errands, library, duplicating room, mail room,[1] lab, reception area, selling floor, and assembly line. We suggest that whatever the work situations are that bring female and male students to these areas, they do not do so differentially in terms of the amount of work time required.

Where there were significant sex differences, what is interesting about them is the frequent reversal of direction from those reported in the preceeding section (Table 10). There, many of the significant differences favored the men--that is, proportionately more men were present in selected locations. In this analysis, all the significant differences, (5% level or better) favor the women: Of the students who were present in the location(s) on Log Day, the women reported spending significantly more time there. All women, compared with All men, reported more time spent in a restaurant area, walking, traveling to other destinations, in a meeting room, classroom, supply room, and patient's hospital room. Within the partitioned groups (if we ignore means based on less than 5 cases), there were only two additional significant differences: NT women spent more time than the men in a supply room, and women in Business spent more time in a computer or keypunch room.

Persons: Some vs. no work time. Now we wish to focus on the persons with whom the students interacted on Log Day. First, however, we should view these items from a more general perspective. Obviously, people would not ordinarily spend the whole day interacting with others, since part of the time would be spent working alone. The Log ratings do not reveal such a time division, but two items from the Questionnaire shed light on this point: Students were asked whether they

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[1] With one exception: the Engineering women spent significantly more time in the mail room, but their mean is based on an N of only 4 cases.

(usually) worked alone,[1] and whether they worked with others. Nearly all students in every group said they worked with others (Entire group, 93%); and in every group except Engineering, slightly more of the men reported doing so. The proportions who said they worked alone were a little lower (Entire group, 81%); nevertheless, working alone was also a common experience. There were no significant sex differences on either of these items. We can conclude that, for all students, the work day was fairly well balanced between interacting with others and working alone. Returning to the Log data, with what people did the students interact on Log Day? Table 12 on the following page (parallel to Table 10 for locations) shows the percentage of students who spent some time with each of the listed types of persons--categorized into three parts: workers in the student's department, workers in another department, and other persons not employed by the company.

Within the student's own department, nearly all students, both male and female, spent some time with their immediate supervisor. Since these percentages are above 90, a portion of these interactions occurred elsewhere than the supervisor's work station (see Table 10, supervisor's office). Although the sexes did not differ significantly on this item, more of the men than of the women said they interacted with their supervisor (since all nonzero group differences are positive). About three-fourths or more of the students spent time with workers in their department at their level or a higher level; but relatively few of them interacted with workers at a lower level than their own. Very few students supervised others, but if they did, they were more likely to be male: every group difference on this item was positive, though not significant.

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[1]The meaning of "working alone" is evidently ambiguous to the students. This item appeared on the Log at the end of the list of persons, but 131 students did not respond to it there. Perhaps they were confused between being alone in a work area, and doing work by oneself even though others are in the same area. This nonresponse problem did not affect the two Questionnaire items, where "work alone" and "work with others" were presented one after the other. The results for these two items appear at the end of Table 12.

TABLE 12

PERSONS WITH WHOM STUDENTS SPENT SOME WORK TIME ON LOG DAY
(PERCENTAGE OF STUDENTS INTERACTING WITH EACH CATEGORY OF PERSONS)

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| IN STUDENT'S DEPT.: | | ALL | FD | NT | MD | ECR | BUS |
| Immediate supervisor | M | 95% | 100% | 96% | 95% | 92% | 97% |
| | F | 95 | 96 | 93 | 95 | 91 | 97 |
| | M-F | +0 | +4 | +3 | -0 | +1 | -0 |
| Other sup. level workers | M | 76 | 73 | 80 | 75 | 75 | 83 |
| | F | 76 | 76 | 85 | 74 | 72 | 78 |
| | M-F | -0 | -3 | -5 | +1 | +3 | +5 |
| Wkrs. at level between S & sup. | M | 85 | 83 | 82 | 86 | 90 | 88 |
| | F | 82 | 84 | 81 | 81 | 91 | 75 |
| | M-F | +3 | -1 | +1 | +5 | -1 | +13* |
| Wkrs. at same level as S | M | 77 | 75 | 78 | 77 | 73 | 83 |
| | F | 75 | 76 | 82 | 71 | 72 | 72 |
| | M-F | +2 | -1 | -4 | +6 | +1 | +11△ |
| Wkrs. S supervises | M | 18 | 25 | 21 | 17 | 10 | 24 |
| | F | 16 | 17 | 18 | 14 | 9 | 16 |
| | M-F | +2 | +8 | +3 | +3 | +1 | +8 |
| Other wkrs.at lower level than S | M | 36 | 40 | 31 | 37 | 28 | 49 |
| | F | 32 | 41 | 29 | 30 | 31 | 33 |
| | M-F | +4 | -1 | +2 | +7 | -3 | +16* |
| NOT IN STUDENT'S DEPT.: | | | | | | | |
| Wkrs. at a level above S | M | 68 | 64 | 60 | 70 | 70 | 75 |
| | F | 63 | 68 | 69 | 60 | 74 | 55 |
| | M-F | +5 | -4 | -9 | +10* | -4 | +20** |
| Wkrs. at same level as S | M | 54 | 70 | 44 | 55 | 50 | 69 |
| | F | 51 | 59 | 50 | 49 | 53 | 47 |
| | M-F | +3 | +11 | -6 | +6 | -3 | +22** |
| Wkrs. at lower level than S | M | 36 | 70 | 34 | 36 | 30 | 49 |
| | F | 35 | 39 | 35 | 33 | 35 | 33 |
| | M-F | +1 | +31 | -1 | +3 | -5 | +16* |

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| OTHER PERSONS: | | ALL | FD | NT | MD | ECR | BUS |
| Delivery or repair people | M | 35% | 22% | 36% | 36% | 24% | 47% |
| | F | 40 | 43 | 51 | 34 | 29 | 31 |
| | M-F | -5 | -21 | -15 | +2 | -5 | +16* |
| Sales people | M | 18 | 22 | 13 | 19 | 12 | 26 |
| | F | 16 | 11 | 16 | 19 | 12 | 23 |
| | M-F | +2 | +11 | -3 | +0 | -0 | +3 |
| Clients, pts, customers, students | M | 37 | 83 | 60 | 32 | 15 | 49 |
| | F | 59 | 88 | 71 | 38 | 15 | 46 |
| | M-F | -22** | -5 | -11 | -6 | -0 | +3 |
| Friends/family not empl. at the org. | M | 18 | 40 | 20 | 17 | 10 | 20 |
| | F | 27 | 25 | 39 | 22 | 15 | 27 |
| | M-F | -9** | +15 | -19▲ | -5 | -5 | -7 |
| Work with others (from Questionnaire) | M | 94 | 100 | 91 | 95 | 94 | 96 |
| | F | 92 | 97 | 89 | 91 | 96 | 87 |
| | M-F | +2 | +3 | +2 | +4 | -2 | +9 |
| Work alone (from Questionnaire) | M | 83 | 78 | 86 | 83 | 85 | 79 |
| | F | 77 | 60 | 82 | 84 | 88 | 82 |
| | M-F | +6 | +18 | +4 | -1 | -3 | -3 |

When students interacted with workers from other departments (see Table 12, page 59), this too was more likely to involve people at a higher level than their own or people at their level, rather than those at a lower level. Close to half the Entire group spent time with clients, customers, patients, or students,[1] although there was marked variation among the separate groups. Very few students majoring in Engineering spent any time with such clients; however, most of the FD students did so--probably largely with patients. More than a third of the students interacted with delivery or repair people, but relatively few of them met with salespeople or with friends or family not employed at the company. The women were more likely than the men to spend some time with clients, and with friends or family; on these two items most of the group differences were negative (i.e., favored women), and significantly so for All women vs. All men.

In what other respects did the men and women differ significantly? Comments were made above on some of the consistent trends in sex differences across the groups, but actually almost none of these differences were significant, with the notable exception of the Business group. Significantly more of the men in Business spent time with both higher-level and lower-level workers in their department, with workers in other departments (higher level, same level, and lower level), and with delivery or repair people. Even the nonsignificant differences in the Business group on the remaining persons items follow the same pattern: whatever their job, more of the men than of the women majoring in Business spent work time with other workers of all levels.

Persons: Amount of work time. Of those who spent any time with a given category of workers, how was their work time distributed? Table 13 on the next page presents the means and differences. Means were above 3.0 (or "some" time) in most groups on the following items: amount of time spent with the immediate supervisor, and with same-

[1] Hereafter, we will refer to this grouping of persons as "clients."

TABLE 13

PERSONS: MEAN AMOUNT OF WORK TIME SPENT ON LOG DAY
(BY STUDENTS WHO INTERACTED AT SOMETIME WITH PERSONS IN THE CATEGORY)

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| IN STUDENT'S DEPT.: | | ALL | FD | NT | MD | EGR | BUS |
| Immediate supervisor | M | 3.0 | 2.9 | 3.0 | 3.0 | 3.0 | 3.2 |
| | F | 3.1 | 3.2 | 3.3 | 3.0 | 3.0 | 3.0 |
| | M-F | -.1 | -.3 | -.3 | -0 | -0 | +.2 |
| Other sup. level workers | M | 2.8 | 2.9 | 2.7 | 2.8 | 2.8 | 2.9 |
| | F | 2.9 | 2.8 | 3.0 | 2.9 | 3.0 | 2.8 |
| | M-F | -.1 | +.1 | -.3 | -.1 | -.2 | +.1 |
| Wkrs. at level between S & sup. | M | 3.2 | 3.8 | 3.0 | 3.2 | 3.2 | 3.2 |
| | F | 3.4 | 3.6 | 3.3 | 3.4 | 3.4 | 3.6 |
| | M-F | -.2* | +.2 | -.3 | -.2 | -.2 | -.4* |
| Wkrs. at same level as S | M | 3.2 | 3.8 | 3.1 | 3.2 | 2.9 | 3.5 |
| | F | 3.5 | 3.7 | 3.4 | 3.4 | 3.2 | 3.4 |
| | M-F | -.3** | +.1 | -.3 | -.2△ | -.3 | +.1 |
| Wkrs. S supervises | M | 3.0 | (3.5) | 3.0 | 3.0 | 3.2 | 2.9 |
| | F | 3.1 | 3.1 | 3.4 | 2.9 | (2.0) | 2.9 |
| | M-F | -.1 | +.4 | -.4 | +.1 | +1.2△ | 0 |
| Other wkrs.at lower level than S | M | 2.6 | (2.2) | 2.7 | 2.6 | 2.4 | 2.8 |
| | F | 2.8 | 2.9 | 2.7 | 2.8 | 2.6 | 2.8 |
| | M-F | -.2* | -.7 | -0 | -.2 | -.2 | -0 |
| NOT IN STUDENT'S DEPT.: | | | | | | | |
| Wkrs. at a level above S | M | 2.5 | 2.7 | 2.6 | 2.5 | 2.4 | 2.6 |
| | F | 2.6 | 2.5 | 2.7 | 2.7 | 2.7 | 2.8 |
| | M-F | -.1△ | +.2 | -.1 | -.2* | -.3** | -.2 |
| Wkrs. at same level as S | M | 2.5 | 2.6 | 2.7 | 2.5 | 2.4 | 2.6 |
| | F | 2.6 | 2.5 | 2.7 | 2.6 | 2.6 | 2.7 |
| | M-F | -.1 | +.1 | -0 | -.1 | -.2△ | -.1 |
| Wkrs. at lower level than S | M | 2.5 | 2.3 | 2.8 | 2.4 | 2.4 | 2.4 |
| | F | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.4 |
| | M-F | +.1 | -.1 | +.4 | +0 | -.1 | -0 |

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| OTHER PERSONS: | | ALL | FD | NT | MD | EGR | BUS |
| Delivery or repair people | M | 2.3 | (2.0) | 2.6 | 2.3 | 2.2 | 2.3 |
| | F | 2.2 | 2.2 | 2.1 | 2.2 | 2.3 | 2.2 |
| | M-F | +.1* | -.2 | +.5** | +.1 | -.1 | +.1 |
| Sales people | M | 2.5 | (2.0) | 2.2 | 2.5 | 2.2 | 2.7 |
| | F | 2.6 | 2.1 | 2.9 | 2.6 | (2.0) | 2.8 |
| | M-F | -.1 | -.1 | -.7 | -.1 | +.2 | -.1 |
| Clients, pts, customers, students | M | 3.2 | 4.1 | 3.5 | 3.0 | 2.3 | 3.1 |
| | F | 3.6 | 4.0 | 3.8 | 3.0 | 2.2 | 3.2 |
| | M-F | -.4** | +.1 | -.3 | -0 | +.1 | -.1 |
| Friends/family not empl. at the org. | M | 2.5 | (2.8) | 2.1 | 2.6 | 2.4 | 2.6 |
| | F | 2.6 | 2.8 | 2.5 | 2.5 | 2.0 | 2.7 |
| | M-F | -.1 | -0 | -.4 | +.1 | +.4 | -.1 |

department workers above the student's level, workers at the same level, supervisees, and clients. On the average, students spent less time with workers from other departments and with people from outside the organization.

With respect to sex differences, when we compare the two measures (some time and amount of time), we see some of the same reversal trend that was true of locations. While more of the men in every analytic group tended to spend some time with many more types of workers, the corresponding women who interacted at all with a given category of persons tended to spend more time with them: In most groups, these women said they spent more time with their immediate supervisor, with other workers in their department above their level, those at their own level, and those below their level (but note that supervisees do not clearly fit this pattern). These women also tended to spend more time with higher-level and same-level workers in other departments, and with clients (except for Engineering women). Inspection of Table 13 reveals that some of these differences were significant, particularly in comparisons between All men with All women; however, there were no outstanding patterns that distinguished any one group, such as was the case for the Business group on the previous measure, discussed above.

What do these findings mean? The men in Business are beginning to look like budding executives and managers, building old boy networks, spending more of their time at work interacting with a large variety of other workers. Do the men's jobs give them more opportunities to interact with others? Or are the women more task-oriented (except for seeing family/friends)? A clearer understanding might result from an examination of rest or social time.

Rest or social time: Locations and persons. With respect to locations and persons, we have thus far inspected two measures: what proportion of students spent any time, and how much time did they spend in various locations and with different people? On both these measures, students were describing an entire day at work, from arrival

to departure, including meal times. So it is at least theoretically possible that, for example, the greater amount of time spent by women with friends or family could reflect meeting such people for lunch; or the larger proportions of men who were in their supervisor's office during the day might have spent some of that time socializing rather than on work-related matters. To help interpret the work time findings, we can examine the students' ratings of where and with whom they spent any rest or social time. Table 14 (page 64) shows the results for locations, and Table 15 (page 66) for persons. Obviously, how one spends one's time depends to a considerable extent on what opportunities the job provides; as an illustration, students who were never in a given location could not socialize there. Thus we would expect some correspondence between results for work time and those for social time.

The most common locations for the students to spend rest or social time were as is expected, in an eating area, employee lounge, and their own work station--findings which support the notion that the two work measures include some social time as well as work time. A fairly large proportion of students spent some rest or social time with the various categories of persons from their own department--except with supervisees, which we already know was uncommon. Socializing with people outside the department was relatively much less common--even with the higher-level and same-level people that many students spent work time with.

There were some fairly consistent trends in sex differences across the various groups (if we generally ignore the unreliable FD group differences). More of the women spent some social time outdoors, walking (except women in Business), in a greenhouse (where more women worked), restaurant area, and employee lounge (except NT women). These sex differences, however, were not significant, except that All women and Business women spent more time than the corresponding men in the lounge. More of the men said they spent social time traveling to other destinations and on errands (except NT men), at their own work

TABLE 14

LOCATIONS WHERE STUDENTS SPENT REST OR SOCIAL TIME ON LOG DAY
(PERCENTAGE OF STUDENTS PRESENT IN THE LOCATION)

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | [illegible] | EGR | BUS |
| Walking | M | 43% | 30% | 35% | 45% | 40% | 49% |
| | F | 44 | 46 | 43 | 45 | 44 | 43 |
| | M-F | -1 | -16 | -8 | -0 | -4 | +6 |
| Your own office, station or desk | M | 53 | 0 | 50 | 56 | 56 | 53 |
| | F | 44 | 41 | 33 | 51 | 69 | 48 |
| | M-F | +9* | -41* | +17 | +5 | -13 | +5 |
| Employee lounge, restroom | M | 52 | 62 | 51 | 52 | 50 | 54 |
| | F | 60 | 71 | 50 | 61 | 53 | 71 |
| | M-F | -8* | -9 | +1 | -9△ | -3 | -17* |
| Supervisor's office or station | M | 38 | 12 | 30 | 39 | 36 | 45 |
| | F | 24 | 21 | 29 | 24 | 30 | 22 |
| | M-F | +14** | -9 | +1 | +15** | +6 | +23* |
| Cafeteria, restaurant, kitchen | M | 65 | 50 | 56 | 66 | 64 | 74 |
| | F | 70 | 67 | 72 | 70 | 74 | 78 |
| | M-F | -5 | -17 | -16 | -4 | -10 | -4 |
| General office or secretarial area | M | 41 | 11 | 36 | 42 | 43 | 48 |
| | F | 36 | 43 | 34 | 34 | 46 | 36 |
| | M-F | +5 | -32 | +2 | +8 | -3 | +12 |
| Traveling to other destinations | M | 29 | 29 | 12 | 31 | 31 | 33 |
| | F | 25 | 22 | 20 | 30 | 24 | 24 |
| | M-F | +4 | +7 | -8 | +1 | +7 | +9 |
| Duplicating or Xerox room | M | 14 | 11 | 12 | 15 | 13 | 17 |
| | F | 9 | 4 | 14 | 11 | 20 | 9 |
| | M-F | +5 | +7 | -2 | +4 | -7 | +8 |
| Stockroom, storeroom, supply room | M | 9 | 12 | 3 | 10 | 8 | 14 |
| | F | 10 | 15 | 11 | 9 | 12 | 4 |
| | M-F | -1 | -3 | -8 | +1 | -4 | +10 |
| Outdoors | M | 27 | 0 | 25 | 27 | 27 | 26 |
| | F | 27 | 15 | 29 | 32 | 37 | 29 |
| | M-F | -0 | -15 | -4 | -5 | -10 | -3 |
| Other private office | M | 24 | 11 | 6 | 27 | 30 | 20 |
| | F | 17 | 18 | 17 | 16 | 27 | 12 |
| | M-F | +7△ | -7 | -11 | +11* | +3 | +8 |
| Conference or meeting room | M | 14 | 40 | 8 | 13 | 12 | 17 |
| | F | 15 | 20 | 24 | 10 | 12 | 6 |
| | M-F | -1 | +20 | -16△ | +3 | +0 | +11 |

| LOCATIONS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Computer or keypunch room | M | 10% | 0% | 3% | 11% | 9% | 10% |
| | F | 4 | 6 | 5 | 4 | 0 | 4 |
| | M-F | +6* | -6 | -2 | +7* | +9 | +6 |
| Reception area, waiting room | M | 18 | 44 | 27 | 15 | 6 | 27 |
| | F | 21 | 23 | 23 | 17 | 14 | 14 |
| | M-F | -3 | +21 | +4 | -2 | -8 | +13 |
| Laboratory | M | 11 | 0 | 11 | 12 | 15 | 5 |
| | F | 7 | 6 | 17 | 4 | 14 | 0 |
| | M-F | +4 | -6 | -6 | +8* | +1 | +5 |
| Library | M | 11 | 33 | 26 | 7 | 6 | 8 |
| | F | 7 | 6 | 16 | 5 | 21 | 0 |
| | M-F | +4 | +27* | +10 | +2 | -15* | +8 |
| Post Office, bank, UPS (on errand) | M | 8 | 22 | 5 | 9 | 7 | 11 |
| | F | 6 | 2 | 7 | 7 | 4 | 10 |
| | M-F | +2 | +20△ | -2 | +2 | +3 | +1 |
| Mail room | M | 6 | 11 | 8 | 6 | 2 | 11 |
| | F | 8 | 6 | 12 | 6 | 0 | 8 |
| | M-F | -2 | +5 | -4 | -0 | +2 | +3 |
| Classroom | M | 5 | 25 | 8 | 3 | 2 | 4 |
| | F | 6 | 9 | 11 | 2 | 0 | 2 |
| | M-F | -1 | +16 | -3 | +1 | +2 | +2 |
| Selling floor | M | 4 | 12 | 0 | 4 | 1 | 9 |
| | F | 8 | 10 | 19 | 2 | 0 | 2 |
| | M-F | -4 | +2 | -19* | +2 | +1 | +7 |
| Assembly line | M | 7 | 0 | 3 | 7 | 12 | 3 |
| | F | 3 | 0 | 5 | 3 | 0 | 6 |
| | M-F | +4△ | 0 | -2 | +4 | +12 | -3 |
| Patient's hospital room | M | 3 | 0 | 8 | 2 | 2 | 3 |
| | F | 10 | 24 | 12 | 1 | 0 | 2 |
| | M-F | -7** | -24 | -4 | +1 | +2 | +1 |
| Greenhouse | M | 1 | 0 | 0 | 1 | 0 | 1 |
| | F | 2 | 0 | 2 | 2 | 5 | 2 |
| | M-F | -1 | 0 | -2 | -1 | -5 | -1 |

station, and in a library (except Engineering men). The most striking and most highly significant differences in locations were that more men--especially those in the traditionally male groups--spent social time in their supervisor's office or station (All, 1% level; MD, 1%; Business, 5%).

Looking at the other categories of persons in Table 15, generally more of the men spent some social time with higher-level workers in other departments, and the Business men significantly so; but the Engineering group does not follow this pattern--significantly more of the women in Engineering spent social time with higher-level workers from other departments, a finding that is consistent with the greater proportion of these women who socialized with their supervisor. On the other hand, more women than men (except in Business) spent social time with lower-level workers in other departments. More of the women (except MD women) also spent social time with friends or family who are not employees, and with clients. Surprisingly, the latter item is contributed to largely, and significantly, by the NT women, and not, as might have been expected, by the FD women who work with patients. The NT women were also deviant in one other respect: the proportion of them who spent social time with equals in their own department was remarkably low in comparison with all other groups, both male and female.

Two other items (activities) from the Questionnaire are related to the Log ratings of rest or social time; the students were asked whether they socialized at work with their co-workers and with their supervisors. (See Table 15.) Since the Questionnaire asked, in effect, whether the students usually performed the listed activities, it is to be expected that the percentages will be higher than for the one day rated on the Log. Still, there should be some correspondence between these items on the two instruments, and that is what happened. More of the students said they socialized with co-workers at work (Entire group, 93%) than with supervisors (Entire, 81%); apart from the lower level of the percentages, these results correspond to

TABLE 15

PERSONS WITH WHOM STUDENTS SPENT REST OR SOCIAL TIME ON LOG DAY
(PERCENTAGE OF STUDENTS INTERACTING WITH PERSONS IN THE CATEGORY)

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| IN STUDENT'S DEPT.: | | ALL | FD | NT | MD | ECR. | BUS. |
| Immediate supervisor | M | 55% | 22% | 58% | 55% | 47% | 67% |
| | F | 57 | 67 | 61 | 50 | 54 | 51 |
| | M-F | -2 | -45* | -3 | +5 | -7 | +16Δ |
| Other sup. level workers | M | 48 | 14 | 52 | 48 | 47 | 53 |
| | F | 46 | 39 | 56 | 45 | 50 | 43 |
| | M-F | +2 | -25 | -4 | +3 | -3 | +10 |
| Wkrs. at level between S & sup. | M | 65 | 62 | 54 | 67 | 70 | 65 |
| | F | 66 | 70 | 65 | 64 | 62 | 67 |
| | M-F | -1 | -8 | -11 | +3 | +8 | -2 |
| Wkrs. at same level as S | M | 66 | 78 | 53 | 67 | 64 | 71 |
| | F | 66 | 62 | 26 | 62 | 65 | 60 |
| | M-F | -0 | +16 | -23* | +5 | -1 | +11 |
| Wkrs. S supervises | M | 12 | 0 | 12 | 12 | 10 | 13 |
| | F | 14 | 15 | 22 | 10 | 5 | 15 |
| | M-F | -2 | -15 | -10 | +2 | +5 | -2 |
| Other wkrs.at lower level than S | M | 32 | 25 | 29 | 33 | 26 | 38 |
| | F | 28 | 26 | 35 | 26 | 35 | 23 |
| | M-F | +4 | -1 | -6 | +7 | -9 | +15 |
| NOT IN STUDENT'S DEPT.: | | | | | | | |
| Wkrs. at a level above S | M | 43 | 25 | 57 | 42 | 34 | 49 |
| | F | 39 | 38 | 39 | 38 | 62 | 28 |
| | M-F | +4 | -13 | +18 | +4 | -28* | +21* |
| Wkrs. at same level as S | M | 45 | 40 | 32 | 48 | 40 | 58 |
| | F | 43 | 42 | 43 | 43 | 54 | 37 |
| | M-F | +2 | -2 | -11 | +5 | -14 | +21* |
| Wkrs. at lower level than S | M | 25 | 22 | 24 | 26 | 19 | 37 |
| | F | 27 | 22 | 37 | 26 | 41 | 22 |
| | M-F | -2 | 0 | -13 | -0 | -22Δ | +15Δ |

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| OTHER PERSONS: | | ALL | FD | NT | MD | ECR. | BUS. |
| Delivery or repair people | M | 24% | 0% | 24% | 25% | 15% | 35% |
| | F | 21 | 23 | 22 | 18 | 24 | 14 |
| | M-F | +3 | -23 | +2 | +7 | -9 | +21* |
| Sales people | M | 12 | 11 | 0 | 14 | 8 | 21 |
| | F | 7 | 6 | 15 | 4 | 5 | 4 |
| | M-F | +5 | +5 | -15Δ | +10* | +3 | +17* |
| Clients, pts, customers, students | M | 20 | 62 | 21 | 18 | 10 | 27 |
| | F | 38 | 57 | 49 | 22 | 5 | 28 |
| | M-F | -18** | +5 | -28* | -4 | +5 | -1 |
| Friends/family not empl. at the org. | M | 25 | 11 | 31 | 25 | 16 | 28 |
| | F | 35 | 34 | 40 | 14 | 19 | 40 |
| | M-F | -10* | -23 | -9 | +11 | -3 | -12 |
| Soclz. with co-workers atwork (from Quest.) | M | 94 | 100 | 89 | 95 | 92 | 96 |
| | F | 91 | 88 | 91 | 93 | 96 | 88 |
| | M-F | +3 | +12 | -2 | +2 | -4 | +8 |
| Soclz. with Sups. at work (from Quest.) | M | 86 | 89 | 83 | 86 | 85 | 84 |
| | F | 75 | 78 | 77 | 73 | 83 | 65 |
| | M-F | +11** | +11 | +6 | +13** | +2 | +19* |

the students' Log rest/social time ratings for same-level workers in their department (66%) and for the immediate supervisor (56%). With respect to socializing with co-workers during the work day, sex differences were slight. Socializing with supervisors, however, was much more characteristic of the men; in every group more of the men said they did this, and significantly so in some cases (All and MD, 1% level; Business, 5%). These results give added support to the hypothesis that these men, on their first co-op job, are already beginning to implement the stereotypical male pattern of establishing contact networks with their superiors.

The Typical Day at Work: Students' Views of Activities

Since the list of activities (tasks) rated by students is long and varied, for ease of presentation we have divided them into four "sets." This placement of the activities, based on the authors' judgment, was modelled on the scheme of classification of work functions in the Dictionary of Occupational Titles (1977, p. xviii), which considers the probable level of skills and the complexity of responsibility and judgment that the work tasks involve. We made no attempt to order the tasks by complexity within any set. Our division of tasks can be regarded only as approximations; a task such as making phone calls, which we placed in Set B, might need little special skill, or might require considerable responsibility and judgment. Also, each of the sets includes tasks that we would ordinarily expect most co-op student workers to perform nearly every day on their jobs. Keeping these qualifications in mind, the Set A tasks can be described as relatively routine and conventional, Set B tasks as generally calling for more skill and judgment, and Set C tasks as probably involving the most responsibility and judgment. Set D is a miscellaneous array of activities; these are not actually work tasks, but rather attributes of the work situation, some of which (such as taking meal breaks) might be expected of nearly every student.

TABLE 16

ACTIVITIES ON WHICH STUDENTS SPENT SOME WORK TIME ON LOG DAY
(PERCENTAGE OF STUDENTS WHO ENGAGED IN EACH TASK)

| SET A: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Fill out forms, keep records | M | 76% | 82% | 70% | 77% | 70% | 90% |
| | F | 66 | 71 | 57 | 68 | 53 | 78 |
| | M-F | +10** | +11 | +13 | +9△ | +17△ | +12* |
| Answer phones, take messages | M | 66 | 67 | 70 | 66 | 59 | 81 |
| | F | 71 | 65 | 78 | 70 | 71 | 72 |
| | M-F | -5 | +2 | -8 | -4 | -12 | +9 |
| File, copy numbers, check | M | 56 | 45 | 46 | 57 | 45 | 80 |
| | F | 59 | 55 | 54 | 63 | 50 | 76 |
| | M-F | -3 | -10 | -8 | -6 | -5 | +4 |
| Duplicate, Xerox | M | 62 | 64 | 48 | 64 | 60 | 80 |
| | F | 51 | 24 | 51 | 64 | 55 | 80 |
| | M-F | +11** | -40* | -3 | -0 | +5 | -0 |
| Do errands for work | M | 54 | 67 | 60 | 53 | 45 | 68 |
| | F | 51 | 59 | 69 | 41 | 44 | 38 |
| | M-F | +3 | +8 | -9 | +12* | +1 | +30** |
| Lift or carry things | M | 41 | 60 | 46 | 40 | 33 | 50 |
| | F | 40 | 55 | 43 | 32 | 30 | 25 |
| | M-F | +1 | +5 | +3 | +8 | +3 | +25** |
| Stamp, staple, paste | M | 32 | 36 | 31 | 32 | 21 | 55 |
| | F | 43 | 39 | 42 | 44 | 27 | 57 |
| | M-F | -11** | -3 | -11 | -12* | -6 | -2 |
| Shelve supplies | M | 23 | 36 | 29 | 22 | 15 | 30 |
| | F | 27 | 44 | 30 | 18 | 12 | 15 |
| | M-F | -4 | -8 | -1 | +4 | +3 | +15* |
| Clean equipment or animals | M | 19 | 40 | 28 | 17 | 19 | 11 |
| | F | 20 | 35 | 25 | 11 | 15 | 5 |
| | M-F | -1 | +5 | +3 | +6△ | +4 | +6 |
| Deliver mail | M | 16 | 20 | 27 | 15 | 7 | 25 |
| | F | 20 | 21 | 24 | 18 | 6 | 20 |
| | M-F | -4 | -1 | +3 | -3 | +1 | +5 |
| Feed patients or animals | M | 3 | 20 | 11 | 2 | 1 | 1 |
| | F | 11 | 22 | 13 | 3 | 0 | 0 |
| | M-F | -8** | -2 | -2 | -1 | +1 | +1 |

| SET B: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Collect or sort data or things | M | 70% | 50% | 68% | 70% | 67% | 80% |
| | F | 63 | 49 | 63 | 71 | 70 | 76 |
| | M-F | +7△ | +1 | +5 | -1 | -3 | +4 |
| Operate eqpmt. other than typewriter | M | 68 | 60 | 61 | 68 | 69 | 67 |
| | F | 62 | 57 | 61 | 65 | 58 | 73 |
| | M-F | +6 | +3 | +0 | +3 | +11 | -6 |
| Tabulate data (by hand or calculator) | M | 67 | 50 | 44 | 70 | 66 | 86 |
| | F | 53 | 31 | 47 | 65 | 67 | 82 |
| | M-F | +14** | +19 | -3 | +5 | -1 | +4 |
| Make phone calls for work | M | 55 | 67 | 51 | 56 | 50 | 73 |
| | F | 55 | 51 | 51 | 59 | 61 | 66 |
| | M-F | -0 | +16 | +0 | -3 | -11 | +7 |
| Take notes | M | 49 | 64 | 54 | 48 | 44 | 55 |
| | F | 45 | 51 | 53 | 41 | 45 | 39 |
| | M-F | +4 | +13 | +1 | +7 | -1 | +16* |
| Proofread | M | 39 | 36 | 33 | 40 | 31 | 59 |
| | F | 45 | 33 | 54 | 48 | 30 | 63 |
| | M-F | -6 | +3 | -21* | -8 | +1 | -4 |
| Type for work | M | 18 | 20 | 26 | 17 | 5 | 31 |
| | F | 31 | 28 | 39 | 28 | 9 | 34 |
| | M-F | -13** | -8 | -13 | -11** | -4 | -3 |
| Keypunch, verify | M | 24 | 0 | 9 | 27 | 21 | 31 |
| | F | 14 | 8 | 12 | 19 | 6 | 23 |
| | M-F | +10** | -8 | -3 | +8△ | +15* | +8 |
| Make security checks, guard | M | 15 | 20 | 17 | 15 | 8 | 17 |
| | F | 13 | 9 | 7 | 15 | 16 | 16 |
| | M-F | +2 | +11 | +10 | -0 | -8 | +1 |
| Attend meetings | M | 42 | 67 | 50 | 40 | 34 | 50 |
| | F | 47 | 49 | 64 | 40 | 38 | 42 |
| | M-F | -5 | +18 | -14 | +0 | -4 | +8 |

TABLE 16 (continued)

| SET C: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Make decisions | M | 81% | 80% | 78% | 81% | 79% | 84% |
| | F | 80 | 83 | 85 | 77 | 79 | 79 |
| | M-F | +1 | -3 | -7 | +4 | -0 | +5 |
| Read for work | M | 66 | 64 | 75 | 64 | 63 | 65 |
| | F | 63 | 62 | 70 | 61 | 62 | 66 |
| | M-F | +3 | +2 | +5 | +3 | +1 | -1 |
| Develop ideas | M | 67 | 55 | 69 | 68 | 71 | 62 |
| | F | 59 | 62 | 75 | 52 | 65 | 47 |
| | M-F | +8* | -7 | -6 | +16** | +6 | +15* |
| Write work reports or letters | M | 54 | 50 | 54 | 54 | 48 | 64 |
| | F | 52 | 39 | 55 | 55 | 38 | 65 |
| | M-F | +2 | +11 | -1 | -1 | +10 | -1 |
| Deal with customers or clients | M | 36 | 36 | 51 | 34 | 17 | 57 |
| | F | 48 | 61 | 59 | 38 | 15 | 45 |
| | M-F | -12** | -25 | -8 | -4 | +2 | +12 |
| Instruct other workers | M | 39 | 50 | 37 | 39 | 30 | 52 |
| | F | 36 | 38 | 37 | 36 | 30 | 37 |
| | M-F | +3 | +12 | +0 | +3 | +0 | +15* |
| Operate a computer | M | 30 | 0 | 11 | 33 | 35 | 31 |
| | F | 18 | 8 | 15 | 24 | 18 | 25 |
| | M-F | +12** | -8 | -4 | +9△ | +17* | +6 |
| Order supplies, take inventory | M | 25 | 20 | 17 | 27 | 21 | 35 |
| | F | 24 | 36 | 27 | 17 | 16 | 19 |
| | M-F | +1 | -16 | -10 | +10* | +5 | +16* |
| Instruct or tutor Pts., clients, Ss | M | 16 | 67 | 35 | 11 | 4 | 17 |
| | F | 35 | 73 | 38 | 14 | 3 | 17 |
| | M-F | -19** | -6 | -3 | -3 | +1 | -0 |
| Supervise patients, clients, Ss | M | 12 | 60 | 32 | 7 | 3 | 11 |
| | F | 31 | 68 | 36 | 10 | 6 | 9 |
| | M-F | -19** | -8 | -4 | -3 | -3 | +2 |
| Repair equipment | M | 22 | 30 | 23 | 21 | 22 | 19 |
| | F | 14 | 12 | 12 | 16 | 21 | 11 |
| | M-F | +8** | +18 | +11 | +5 | +1 | +8 |

| SET D: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Receive instructions | M | 94% | 100% | 94% | 94% | 94% | 94% |
| | F | 91 | 88 | 93 | 92 | 97 | 92 |
| | M-F | +3 | +12 | +1 | +2 | -3 | +2 |
| Have work reviewed, checked, corrected | M | 78 | 73 | 71 | 80 | 79 | 85 |
| | F | 71 | 65 | 78 | 73 | 74 | 79 |
| | M-F | +7△ | +8 | -7 | +7 | +5 | +6 |
| Wait for instructions or machine time | M | 54 | 33 | 52 | 55 | 53 | 63 |
| | F | 50 | 39 | 48 | 55 | 64 | 57 |
| | M-F | +4 | -6 | +4 | +0 | -11 | +6 |
| Take meal breaks | M | 93 | 82 | 88 | 95 | 96 | 96 |
| | F | 92 | 92 | 90 | 93 | 100 | 89 |
| | M-F | +1 | -10 | -2 | +2 | -4 | +7 |
| Take rest breaks | M | 76 | 60 | 76 | 77 | 81 | 75 |
| | F | 75 | 78 | 84 | 69 | 82 | 65 |
| | M-F | +1 | -18 | -8 | +8△ | -1 | +10 |
| Get lunch or coffee for coworkers | M | 18 | 10 | 22 | 18 | 7 | 34 |
| | F | 23 | 27 | 29 | 18 | 15 | 17 |
| | M-F | -5 | -17 | -7 | -0 | -8 | +17* |
| Get lunch or coffee for supervisors | M | 13 | 10 | 14 | 13 | 3 | 27 |
| | F | 18 | 19 | 28 | 14 | 3 | 14 |
| | M-F | -5* | -9 | -14 | -1 | -6 | +11* |
| Work under extreme temperatures | M | 17 | 11 | 23 | 16 | 15 | 11 |
| | F | 20 | 23 | 32 | 15 | 12 | 14 |
| | M-F | -3 | -12 | -9 | +1 | +3 | -3 |
| Work under hazardous conditions | M | 16 | 0 | 13 | 17 | 20 | 9 |
| | F | 12 | 15 | 10 | 11 | 24 | 7 |
| | M-F | +4 | -15 | +3 | +6△ | -4 | +2 |
| Analyze data (Set C, Quest.) | M | 64 | 22 | 66 | 66 | 67 | 69 |
| | F | 42 | 25 | 50 | 51 | 75 | 42 |
| | M-F | +22** | -3 | +16 | +15** | -8 | +27** |
| Design instr. techniques (Set C, Quest.) | M | 23 | 11 | 23 | 23 | 29 | 12 |
| | F | 12 | 12 | 18 | 9 | 8 | 10 |
| | M-F | +11** | -1 | +5 | +14 | +21* | +2 |

The analyses of work time that we included are the same as those for locations and persons: how many students spent any time on the activities, and how much time? After we examine the time measures, we will look at the students' views of the appropriateness of their work activities, and (from the Questionnaire) how well they felt they could perform them. Results for activities in Sets A and B will be shown side by side on one page of the tables; Sets C and D will be shown on the second page.

Activities: Some vs. no work time. Table 16 on pages 68 and 69 presents the proportion of students in each group who spent some work time on Log Day at each of the listed activities. First, in order to get an overall orientation to the results in Sets A, B, and C, we obtained, within each set, the median percentage of the students in the Entire group (All men plus All women) who spent some work time on the activities. Set A has a median of 40 percent; Set B, 46 percent; and Set C, 38 percent. That is, on the average, 40 percent of the students spent some work time on Set A activities, and so on. It is notable that these figures are not very disparate; they suggest that the first co-op job of these college students, whatever it may be, involves predominantly tasks we defined as requiring middle-level skills, and next, but not to a very much lesser extent, both more routine activities and more complex ones.

In Set A, common activities (i.e., those performed by more than half the Entire group) included, in decreasing order: filling out forms and keeping records, answering phones and taking messages, filing/copying/checking, duplicating/Xeroxing, and going on work errands. Relatively few students delivered mail or cleaned equipment or animals; and almost none fed patients or animals, except for small proportions in the FD and NT groups.

In Set B, the common activities for the Entire group were: collecting or sorting, operating equipment other than a typewriter, tabulating data, and making phone calls; the least common activity was making security checks.

TABLE 17

ACTIVITIES: MEAN AMOUNT OF WORK TIME SPENT ON LOG DAY
(BY STUDENTS WHO SPENT SOME TIME ON THE TASK)

| SET A: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Fill out forms, keep records | M | 2.9 | 2.2 | 2.8 | 3.0 | 2.6 | 3.4 |
| | F | 3.1 | 3.0 | 2.9 | 3.2 | 3.1 | 3.5 |
| | M-F | -.2* | -.8** | -.1 | -.2* | -.5* | -.1 |
| Answer phones, take messages | M | 2.5 | 2.5 | 2.6 | 2.5 | 2.2 | 2.8 |
| | F | 2.7 | 2.6 | 2.8 | 2.7 | 2.4 | 2.9 |
| | M-F | -.2** | -.1 | -.2 | -.2* | -.2 | -.1 |
| File, copy numbers, check | M | 2.9 | 2.4 | 2.9 | 3.0 | 2.7 | 3.3 |
| | F | 3.0 | 2.8 | 3.1 | 3.1 | 2.5 | 3.4 |
| | M-F | -.1 | -.4 | -.2 | -.1 | +.2 | -.1 |
| Duplicate, Xerox | M | 2.4 | 2.6 | 2.4 | 2.4 | 2.3 | 2.5 |
| | F | 2.5 | 2.6 | 2.3 | 2.6 | 2.5 | 2.7 |
| | M-F | -.1* | +0 | +.1 | -.2** | -.2△ | -.2 |
| Do errands for work | M | 2.5 | 2.5 | 2.7 | 2.5 | 2.3 | 2.6 |
| | F | 2.6 | 2.7 | 2.4 | 2.7 | 2.7 | 2.7 |
| | M-F | -.1 | -.2 | +.3 | -.2* | -.4** | -.1 |
| Lift or carry things | M | 2.5 | 2.5 | 2.7 | 2.5 | 2.4 | 2.5 |
| | F | 2.7 | 2.6 | 2.5 | 2.8 | 2.6 | 2.7 |
| | M-F | -.2 | -.1 | +.2 | -.3* | -.2 | -.2 |
| Stamp, staple, paste | M | 2.4 | (2.8) | 2.5 | 2.3 | 2.3 | 2.3 |
| | F | 2.5 | 2.4 | 2.7 | 2.4 | 2.0 | 2.4 |
| | M-F | -.1 | +.4 | -.2 | -.1 | +.3△ | -.1 |
| Shelve supplies | M | 2.3 | (2.0) | 2.5 | 2.3 | 2.2 | 2.4 |
| | F | 2.4 | 2.4 | 2.4 | 2.5 | (2.8) | 2.6 |
| | M-F | -.1 | -.4 | +.1 | -.2 | -.6* | -.2 |
| Clean equipment or animals | M | 2.5 | (2.5) | 2.4 | 2.5 | 2.5 | 2.5 |
| | F | 2.8 | 2.8 | 2.7 | 3.0 | 2.4 | (3.5) |
| | M-F | -.3** | -.3 | -.3 | -.5* | +.1 | -1.0△ |
| Deliver mail | M | 2.4 | (2.0) | 2.7 | 2.3 | 2.1 | 2.3 |
| | F | 2.3 | 2.1 | 2.4 | 2.5 | (3.0) | 2.3 |
| | M-F | +.1 | -.1 | +.3 | -.2 | -.9* | +0 |
| Feed patients or animals | M | 2.5 | (2.5) | 2.4 | 2.6 | -- | -- |
| | F | 2.7 | 2.8 | 2.4 | (3.2) | -- | -- |
| | M-F | -.2 | -.3 | +0 | -.6 | [NA] | [NA] |

| SET B: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Collect or sort data or things | M | 3.0 | 2.2 | 3.0 | 3.0 | 3.0 | 3.1 |
| | F | 3.0 | 2.9 | 3.2 | 3.0 | 2.7 | 3.2 |
| | M-F | -0 | -.7△ | -.2 | -0 | +.3 | -.1 |
| Operate eqpmt. other than typewriter | M | 3.0 | 2.7 | 3.0 | 3.0 | 3.0 | 3.0 |
| | F | 3.1 | 3.2 | 3.2 | 3.0 | 2.7 | 3.1 |
| | M-F | -.1 | -.5 | -.2 | -0 | +.3 | -.1 |
| Tabulate data (by hand or calculator) | M | 3.0 | 2.8 | 2.6 | 3.1 | 2.9 | 3.4 |
| | F | 3.1 | 2.7 | 2.6 | 3.3 | 2.7 | 3.7 |
| | M-F | -.1 | +.1 | +0 | -.2* | +.2 | -.3△ |
| Make phone calls for work | M | 2.6 | 2.7 | 2.6 | 2.6 | 2.3 | 2.9 |
| | F | 2.6 | 2.5 | 2.8 | 2.7 | 2.5 | 2.7 |
| | M-F | -0 | +.2 | -.2 | -.1 | -.3 | +.2 |
| Take notes | M | 2.5 | 2.6 | 2.8 | 2.5 | 2.3 | 2.7 |
| | F | 2.6 | 2.6 | 2.7 | 2.6 | 2.4 | 2.5 |
| | M-F | -.1 | -0 | +.1 | -.1 | -.1 | +.2 |
| Proofread | M | 2.5 | (2.5) | 2.4 | 2.5 | 2.4 | 2.6 |
| | F | 2.6 | 2.5 | 2.8 | 2.7 | 2.1 | 2.8 |
| | M-F | -.1 | +0 | -.4 | -.2 | +.3 | -.2 |
| Type for work | M | 2.6 | (2.0) | 2.5 | 2.6 | 2.5 | 2.7 |
| | F | 2.9 | 2.6 | 2.9 | 3.0 | (2.7) | 3.2 |
| | M-F | -.3 | -.6 | -.4 | -.4△ | -.2 | -.5△ |
| Keypunch, verify | M | 2.7 | -- | (2.8) | 2.7 | 2.5 | 2.9 |
| | F | 2.9 | 2.7 | 2.4 | 3.0 | (2.5) | 3.2 |
| | M-F | -.2 | [NA] | +.4 | -.3* | -0 | -.3 |
| Make security checks, guard | M | 2.8 | (2.5) | 2.6 | 2.8 | 2.4 | 2.6 |
| | F | 3.1 | 3.1 | (3.2) | 3.2 | 2.8 | 3.2 |
| | M-F | -.3 | -.6 | -.6 | -.4 | -.4 | -.6△ |
| Attend meetings | M | 2.5 | 2.4 | 2.7 | 2.4 | 2.3 | 2.5 |
| | F | 2.6 | 2.6 | 2.6 | 2.7 | 2.3 | 2.7 |
| | M-F | -.1* | -.2 | +.1 | -.3* | +0 | -.2 |

TABLE 17 (continued)

| SET C: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Make decisions | M | 2.8 | 2.6 | 2.8 | 2.8 | 2.6 | 2.9 |
| | F | 3.0 | 3.1 | 3.1 | 2.8 | 2.6 | 2.8 |
| | M-F | -.2** | -.5 | -.3△ | -0 | +0 | +.1 |
| Read for work | M | 2.7 | 2.3 | 2.9 | 2.7 | 2.6 | 2.8 |
| | F | 2.8 | 2.9 | 2.8 | 2.8 | 2.2 | 2.9 |
| | M-F | -.1 | -.6 | +.1 | -.1 | +.4** | -.1 |
| Develop ideas | M | 2.7 | 2.3 | 2.8 | 2.7 | 2.6 | 2.7 |
| | F | 2.9 | 3.2 | 3.0 | 2.8 | 2.8 | 2.8 |
| | M-F | -.2** | -.9* | -.2 | -.1 | -.2 | -.1 |
| Write work reports or letters | M | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 | 3.1 |
| | F | 2.9 | 2.9 | 2.9 | 3.0 | 2.7 | 3.1 |
| | M-F | -.1 | -.1 | -.1 | -.2 | -0 | -0 |
| Deal with customers or clients | M | 3.1 | (3.2) | 3.2 | 3.1 | 2.4 | 3.4 |
| | F | 3.6 | 3.8 | 3.7 | 3.4 | 3.0 | 3.5 |
| | M-F | -.5** | -.6 | -.5△ | -.3* | -.6* | -.1 |
| Instruct other workers | M | 2.4 | 2.0 | 2.3 | 2.4 | 2.3 | 2.4 |
| | F | 2.5 | 2.4 | 2.5 | 2.5 | 2.5 | 2.5 |
| | M-F | -.1 | -.4 | -.2 | -.1 | -.2 | -.1 |
| Operate a computer | M | 3.1 | -- | 3.0 | 3.1 | 2.9 | 3.1 |
| | F | 3.3 | 3.0 | 3.8 | 3.3 | 2.7 | 3.5 |
| | M-F | -.2 | [NA] | -.8 | -.2 | +.2 | -.4 |
| Order supplies, take inventory | M | 2.3 | (2.0) | 2.2 | 2.3 | 2.2 | 2.5 |
| | F | 2.6 | 2.4 | 2.5 | 2.8 | 2.6 | 2.9 |
| | M-F | -.3* | -.4 | -.3 | -.5** | -.4 | -.4△ |
| Instruct or tutor Pts., clients, Ss | M | 2.8 | 3.8 | 3.3 | 2.4 | 2.3 | 2.3 |
| | F | 3.4 | 3.7 | 3.4 | 2.6 | -- | 2.8 |
| | M-F | -.6** | +.1 | -.1 | -.2 | [NA] | -.5 |
| Supervise patients, clients, Ss | M | 3.2 | 3.2 | 3.6 | 2.8 | 2.4 | 2.3 |
| | F | 3.6 | 3.8 | 3.6 | 2.6 | (2.5) | 2.6 |
| | M-F | -.4* | -.6 | +0 | +.2 | -.1 | -.3 |
| Repair equipment | M | 2.5 | (2.3) | 2.5 | 2.5 | 2.6 | 2.4 |
| | F | 2.2 | 2.2 | 2.1 | 2.3 | 2.3 | 2.4 |
| | M-F | +.3* | +.1 | +.4 | +.2 | +.3 | +0 |

| SET D: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Receive instructions | M | 2.8 | 2.9 | 2.8 | 2.8 | 2.6 | 3.1 |
| | F | 3.0 | 3.0 | 3.0 | 3.0 | 2.8 | 3.0 |
| | M-F | -.2* | -.1 | -.2 | -.2* | -.2△ | +.1 |
| Have work reviewed, checked, corrected | M | 2.7 | 2.5 | 2.6 | 2.7 | 2.6 | 2.9 |
| | F | 2.8 | 2.7 | 2.6 | 2.9 | 2.6 | 3.0 |
| | M-F | -.1 | -.2 | +0 | -.2 | -0 | -.1 |
| Wait for instructions or machine time | M | 2.4 | (2.3) | 2.3 | 2.4 | 2.4 | 2.4 |
| | F | 2.4 | 2.4 | 2.5 | 2.3 | 2.2 | 2.4 |
| | M-F | +0 | -.1 | -.2 | +.1 | +.2 | +0 |
| Take meal breaks | M | 2.3 | 2.4 | 2.3 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.3 | 2.5 | 2.4 | 2.5△ | 2.5 |
| | M-F | -.1* | +.1 | -.2 | -.1△ | -.2△ | -.1 |
| Take rest breaks | M | 2.2 | 2.5 | 2.2 | 2.2 | 2.1 | 2.2 |
| | F | 2.2 | 2.2 | 2.3 | 2.2 | 2.1 | 2.3 |
| | M-F | -0 | +.3 | -.1 | +0 | +0 | -.1 |
| Get lunch or coffee for coworkers | M | 2.2 | -- | 2.2 | 2.2 | 2.4 | 2.2 |
| | F | 2.3 | 2.1 | 2.4 | 2.3 | 2.0 | 2.5 |
| | M-F | -.1 | [NA] | -.2 | -.1 | +.4 | -.3 |
| Get lunch or coffee for supervisors | M | 2.3 | -- | 2.3 | 2.3 | (2.5) | 2.2 |
| | F | 2.3 | 2.1 | 2.3 | 2.5 | (2.0) | 2.7 |
| | M-F | -0 | [NA] | -0 | -.2 | +.5 | -.5△ |
| Work under extreme temperatures | M | 2.8 | -- | 3.2 | 2.7 | 2.7 | 2.6 |
| | F | 2.8 | 2.8 | 2.7 | 2.9 | (2.5) | 3.1 |
| | M-F | -0 | [NA] | +.5 | -.2 | +.2 | -.5 |
| Work under hazardous conditions | M | 2.8 | -- | 3.5 | 2.7 | 2.7 | 2.8 |
| | F | 2.9 | 2.5 | 3.5 | 2.9 | 2.9 | 2.8 |
| | M-F | -.1 | [NA] | 0 | -.2 | -.2 | -0 |

In Set C, four-fifths of the students said they "made decisions" (with practically no variation among the groups). Compared with the other items in Set C (which ranged from 12 percent to 67 percent), as well as with Sets A, B, and D, this proportion seems extremely high; with the exception of receiving instructions and taking meal breaks, more students spent time making decisions than at any other activity. However, the meaning of this rating is ambiguous, since we cannot determine the level of the decision-making to which the students were referring. Other common (more than 50 percent) Set C activities were: reading for work, developing ideas, and writing reports. Similar to making decisions, these tasks can cover a wide range of skill levels. Confirming results discussed previously, relatively few students, other than those in the FD group, supervised clients; nor did many of them repair equipment--which, if done at all, was much more likely to be done by men.

The Questionnaire is our source of results on two other items presented at the end of the Set C list: analyzing data and designing instruments or techniques.[1] Remembering that the percentages obtained from the Questionnaire ratings are not directly comparable with (and are usually higher than) those from the Log, we can still be confident that analyzing data was fairly common among these students, while relatively very few of them designed instruments. Note that, as might be predicted, FD students were far less likely to analyze data than students in any other group.

For these three sets of activities (A, B, and C), what consistent patterns did the sex differences show? Men in every group were more likely to perform the following activities, and in some instances significantly more so: filling out forms and keeping records, lifting or carrying, repairing equipment (as already mentioned), and instructing other workers. Also, in most groups the men were more likely

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[1]These two items were inadvertently omitted from the list of Log activities.

to go on errands, clean equipment or animals, operate equipment other than a typewriter, tabulate data, take notes, keypunch, read for work, develop ideas, operate a computer, analyze data, and design instruments. The women in every analytic group were more likely to type, and to stamp, staple, and paste; in most groups they were more likely to answer phones, file/copy/check, feed patients (or animals), proofread, deal with customers or clients, and to instruct and supervise patients/clients/students. Note that "supervising clients" is not the same as the more characteristically male "supervising other workers"--the latter probably encompasses "instructing other workers", an activity that, as we saw, was also more common for the men.

The Business group is worthy of special comment. First, the sex differences were significant on 8 activities--many more than in any other of the partitioned groups. Secondly, several of the nonsignificant differences were opposite in direction to the general trends discussed above. Women in Business were somewhat less likely than the men in that group to answer phones, file/copy/check, and deal with customers; they were somewhat more likely to operate equipment other than a typewriter, and, in contrast to the other groups of women, a little more likely to read for work.

Looking next at the miscellaneous activities of Set D, as we might expect, nearly all students received some instructions on Log Day; this was slightly more common for men than for women (except Engineering women). About three-fourths of the students had their work reviewed; this too was more common for the men (except NT men). Also, as would be usual, students took meal breaks and rest breaks, with no significant differences in the proportions of men and women doing so. About half of each group spent some time waiting for instructions or for the availability of machines--except the FD students, among whom time spent waiting was much less common than in other groups. In general, slightly fewer women said they spent time waiting, except for the Engineering women, more of whom

reported such time than the Engineering men. Relatively few students worked under extreme temperatures or hazardous conditions, although the latter was more common for the men--again with the exception of the Engineering group. The last two items in Set D, getting lunch or coffee for co-workers and for supervisors, are sometimes regarded as stereotypically female activities. Despite the fact that neither of these activities was very common, in most groups more of the women than the men performed them. But the Business group again shows a remarkable and significant reversal of this pattern. Far more of the men in Business did both these tasks than is true of any other group, male or female; the women in Business, however, were fairly similar to the women in the other groups.

Activities: Amount of work time. Table 17 on pages 74 and 75 shows the mean amount of time spent on each activity by students who performed that activity on Log Day. Since there were so many activities listed, no one student could perform very much or very many of them; therefore, the numbers on which these means are based are sometimes quite small, thus reducing their reliability and requiring larger numerical differences in order to reach significance.

Examining first the amount of time spent on all sets of activities by the Entire group, for only four activities did the means exceed 3.0, or "some" time (the highest mean was 3.5). These four--all from Set C, the more complex activities--were, in decreasing order: supervising patients/clients/students, dealing with customers or clients, instructing or tutoring patients/clients/students, and operating a computer. For four other activities the mean amount of work time just reached 3.0; one of these, filling out forms, was from Set A, and the other three were from Set B (operating equipment other than a typewriter, tabulating data, and collecting or sorting data or things). One other Set A activity, filing/copying/checking, had a mean of 2.9; the remaining activities in Set A occupied much less than "some" of the students' time. Activities on which the Entire

group spent the least amount of time include: taking meal or rest breaks and getting lunch/coffee for co-workers or supervisors (all from Set D), and shelving supplies (from Set A).

In summary, of the activities these students performed on their jobs, they reported that they spent little time on a majority of the activities in Sets A and D, somewhat more on Set B activities, and generally still more time, although on the average not a great deal of time, on Set C activities. Thus, even though these students had a beginning co-op job, they had opportunities to practice some rather complex work skills, and not just routine tasks.

What about sex differences? The results resemble those for locations and persons: comparing our two measures task by task, there are many activities on which more of the men spent some time but on which the women spent a greater amount of time. In fact, the evidence in the table is overwhelmingly compelling: In nearly every male-female comparison, the women spent more work time on the given activity than their male counterparts. And of the significant or near-significant (10% level) differences shown, 46 favor the women, while only 3 differences favor the men. The generalization is clear: More of the men performed many of the work activities, but, for the activities that the women performed, they spent more time on them. There is no point in listing the activities at which women worked longer than men; that would be almost a repetition of the whole table. Instead, it is of more interest to look at the exceptions--that is, instances of activities on which the men spent more time than the women.

There is only one activity (see Table 17) on which men in every group spent more time than women: repairing equipment (difference significant at the 5% level for All men vs. All women). This was not a common activity, and it took up little of the work time of any students. On one other activity, waiting for instructions or machine time, men in several groups reported spending slightly more time than the women. It is understandable, even if sex-stereotyped, that men may more often be asked to repair things, but waiting time

seems different. The "waiting" differences may be perceptual--that is, perhaps men are less patient about having to wait and so perceive, and rate, such time as being longer than it actually is.

The remaining exceptions to the general pattern of differences are nearly all slight in magnitude, but almost all of them (ignoring the FD group) occur in the NT and Engineering groups. With respect to the NT group, the women spent less time than the men at the following activities: shelving supplies, errands, duplicating, delivering mail, and lifting/carrying (Set A); keypunching,[1] taking notes, and attending meetings (Set B); reading for work (Set C); working under extreme temperatures (Set D). Looking next at the Engineering group, the women spent less time than the men at Set A: cleaning equipment or animals, filing/copying/checking, and stamping/stapling (10% level); Set B: operating equipment other than a typewriter, tabulating data, proofreading, and collecting/sorting; Set C: operating a computer, and reading for work (1% level); and Set D: working under extreme temperatures,[1] waiting for instructions or machine time, and getting lunch/coffee for co-workers and supervisors.[1]

No ready generalization springs to mind concerning the exceptional NT group activities; since these involve more tasks from Set A than from the other sets, one could speculate about reasons why the NT men perform, or are assigned to, or take longer to do these relatively least complex tasks. To interpret the Engineering group results, the typical work situation of these students needs consideration: it is apt to be a work place where there are mostly men and very few women, all with a male supervisor; also, the students themselves, as co-op college students, are somewhat special in that they are not regular employees. And although here we are comparing groups of men and women, each student is unique (or

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[1] Ns for this item were very small.

nearly so) as a co-op in her or his work unit. In these circumstances it would be a rare supervisor who could entirely avoid treating the Engineering women somewhat differentially. Thus it seems possible that the obtained exceptional resul s for the Engineering group are a consequence of such special circumstances. So we can speculate that co-workers and supervisor(s) tend not to ask the one co-op Engineering woman to get lunch or coffee for them; and that the male supervisor does not expect her to spend much time working under hazardous conditions, and avoids asking her to do some rather elementary or routine tasks. At the same time, the female co-op Engineering student does not receive quite as much opportunity to operate a computer or to read in connection with her work as do her male counterparts. Or it could be that she requires less time than her male peers to carry out her assignments in some of these exceptional activities. To test these hypotheses, we would need a different kind of comparison than the aggregates of male and female co-op students presented here: It would be ideal (but perhaps impractical) to obtain and analyze ratings from matched pairs--one co-op student and one comparable (and same-sex) regular employee at the same organization, with the supervisor's ratings for both.

Work Activities: Student Views of Appropriateness

For each activity, students rated whether they considered it appropriate (yes or no) for their job--regardless of whether they actually did it or not. Although we analyzed these ratings for all respondents, it seemed more important to present the opinions of only those students who performed a particular activity.[1] The question these data address then is, were students performing tasks that seemed appropriate to them?

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[1]The Ns which are the base of these percentages in this section are comparable to those for the Log, Table 17; that is, these are the students who, on the Questionnaire, said they performed the activity "more than just once or twice" during their co-op placement.

The results are very clearcut: A large majority of students in every group regarded almost all of the activities which they performed as being appropriate to their job (see Appendix, Table C3). With two exceptions, all activities were deemed appropriate by at least 74 percent of the Entire group. The exceptions concerned working under hazardous conditions and under extreme temperatures--but a surprisingly large proportion accepted each of these conditions as appropriate (Entire group, 70% and 55%, respectively).

Another approach we took to these data was to consider, within Sets A, B, and C, the median percentage of "appropriate" ratings per task by the Entire group--just as was done with work time. The median proportions of "appropriate" ratings were 89 percent for Set A tasks (range 77-96%), 94 percent for Set B (range 85-97%), and 95 percent for Set C (range 79-97%). One possible meaning of these scores is that the students show a slight tendency to disparage the Set A tasks. That seems understandable, since these are probably the less interesting activities, and inexperienced workers of any kind or level do not necessarily appreciate the routine nature of a large part of work.

Turning to the male-female differences, even though very few of these were significant, some interesting patterns emerge. First, more females in nearly every group consider most of the tasks in Sets A and C appropriate to their job; these are usually the same tasks on which the women spent more work time (see Table 17). The reversals from this trend include the following: a slightly <u>smaller</u> proportion of women than men in most analytic groups regarded it as appropriate to repair equipment (at which women spent significantly less work time than men), read for work, operate a computer, and make decisions--all Set C, presumably more complex tasks; plus duplicating/Xeroxing--from Set A.

For the activities in Sets B and D, an opposite pattern prevails: In most groups, more of the <u>men</u> rate many of these activities as appropriate to their job--even though, as we have seen, the men generally spent less work time on those tasks. Here the exceptions

(or reversals) are that more female students consider it appropriate to type, to operate other equipment, and to take rest breaks.

In summary, students who perform an activity are very likely to consider that activity as appropriate to their job and (comparing the appropriateness ratings with the two work time measures), there tends to be a direct positive relationship between the amount of time spent on an activity and the view of the task as appropriate. Most tasks were rated as appropriate by more than half of the students who performed them, with a suggestion that they view the more routine tasks as somewhat less appropriate than tasks involving more complex functions.

Assessment of Work Performance

This section deals with the ability of students to perform various work activities and seeks answers to the questions of how they assess their performance, and how their self-assessments compare with their supervisors' assessments. Students rated how well they could or did perform various tasks (as "very well" or "not very well"); the results for all student respondents were used in the following analyses, irrespective of whether or not the student performed the activity. In contrast, and similar to the way the appropriateness ratings were treated, supervisors rated only those activities actually performed by the student; thus, the Ns per item for the supervisors' ratings is low.[1]

Students' self-ratings. Table 18 shows the percentage of students in each group who said they could perform the work tasks of Sets A, B, and C very well.[2]

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[1] The scale used by supervisors was: 1 = below average compared to the usual, regular full-time employee in the same job ; 2 = average ; 3 = above average. Activities not performed by the student were to be checked as "not applicable."

[2] Table 18 omits the Set D job attributes, for which ability ratings are not meaningful.

If our assignment of activities to Set A, Set B, or Set C is correct--that is, approximates three differing and increasing levels of complexity of function, then we might expect more students to consider themselves able to perform the least complex tasks and fewest able to perform the most complex tasks "very well." For the Entire group of students, self-ratings on Set A activities accorded with this expectation (median, 91%; range, 55-97%); that is, about 9 out of 10 students felt they were very well able to do routine work tasks. The median percentages for the activities of Sets B and C did not follow the expectation--both were equal (82%)--but the ranges did (Set B range, 44-95%; Set C, 37-93%). Of course, the students' ratings of their own ability do not constitute any proof of task difficulty level. As a matter of fact, tasks which relatively few of the Entire group of students said they could perform very well are also the same tasks performed by very few students.[1] (See Table 16.) This suggests a stronger relationship between familiarity with an activity and how well a student rates her or his ability to perform it--a generalization that supports the findings that smaller proportions of students are very well able to perform Set C activities which are not only judged by the authors as complex, but were actually performed by the smallest percentage of students.

In what respects did the male and female students differ in self-rated ability? Significantly more of All women considered themselves very well able to file/copy/check, feed patients (or animals), stamp/staple/paste, proofread, type, deal with customers or clients, and supervise patients/clients/students. Significantly

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[1]Relatively few students said they could or do perform the following very well (percent in parentheses): clean equipment or animals (58%), feed patients or animals (55%), operate a computer (52%), keypunch/verify (48%), design instruments/techniques (48%), type (44%), and operate other (than a typewriter) equipment (37%).

TABLE 18

ACTIVITIES: STUDENTS' SELF-RATINGS OF ABILITY TO PERFORM THE LISTED TASKS
(PERCENTAGE OF STUDENTS WHO FEEL "VERY WELL" ABLE TO DO THE TASK)

| SET A: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Fill out forms, keep records | M | 94% | 100% | 94% | 94% | 92% | 100% |
| | F | 98 | 95 | 100 | 98 | 96 | 100 |
| | M-F | -4△ | +5 | -6 | -4 | -4 | [NA] |
| Answer phones, take messages | M | 89 | 100 | 91 | 88 | 89 | 89 |
| | F | 93 | 95 | 93 | 92 | 88 | 94 |
| | M-F | -4 | +5 | -2 | -4 | +1 | -5 |
| File, copy numbers, check | M | 86 | 89 | 91 | 85 | 82 | 91 |
| | F | 92 | 87 | 88 | 96 | 88 | 100 |
| | M-F | -6* | +2 | +3 | -11** | -6 | -9△ |
| Duplicate, Xerox | M | 98 | 89 | 100 | 98 | 97 | 99 |
| | F | 95 | 95 | 90 | 97 | 96 | 98 |
| | M-F | +3 | -6 | +10 | +1 | +1 | +1 |
| Do errands for work | M | 96 | 100 | 97 | 96 | 96 | 99 |
| | F | 96 | 95 | 98 | 96 | 96 | 96 |
| | M-F | -0 | +5 | -1 | -0 | -0 | +3 |
| Lift or carry things | M | 88 | 100 | 84 | 88 | 87 | 91 |
| | F | 64 | 76 | 52 | 62 | 54 | 57 |
| | M-F | +24** | +24 | +32** | +26** | +33** | +34** |
| Stamp, staple, paste | M | 91 | 100 | 97 | 89 | 90 | 96 |
| | F | 98 | 95 | 98 | 99 | 100 | 100 |
| | M-F | -7** | +5 | -1 | -10** | -10 | -4 |
| Shelve supplies | M | 96 | 100 | 97 | 96 | 96 | 97 |
| | F | 96 | 95 | 95 | 96 | 88 | 98 |
| | M-F | +0 | +5 | +2 | -0 | +8 | -1 |
| Clean equipment or animals | M | 59 | 62 | 68 | 57 | 66 | 38 |
| | F | 58 | 75 | 61 | 47 | 65 | 29 |
| | M-F | +1 | -13 | +7 | +10 | +1 | +9 |
| Deliver mail | M | 86 | 89 | 90 | 86 | 88 | 84 |
| | F | 91 | 92 | 87 | 92 | 83 | 96 |
| | M-F | -5 | -3 | +3 | -6 | +5 | -12 |
| Feed patients or animals | M | 48 | 75 | 71 | 44 | 40 | 46 |
| | F | 64 | 75 | 56 | 60 | 65 | 49 |
| | M-F | -16** | -0 | +15 | -16** | -25* | -3 |

| SET B: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Collect or sort data or things | M | 96% | 88% | 97% | 96% | 96% | 97% |
| | F | 95 | 94 | 93 | 97 | 96 | 96 |
| | M-F | +1 | -6 | +4 | -1 | +0 | +1 |
| Operate eqpmt. other than typewriter | M | 81 | 62 | 81 | 82 | 82 | 77 |
| | F | 81 | 81 | 70 | 86 | 88 | 90 |
| | M-F | +0 | -19 | +11 | -4 | -6 | -13 |
| Tabulate data (by hand or calculator) | M | 98 | 100 | 97 | 98 | 99 | 96 |
| | F | 90 | 80 | 85 | 98 | 96 | 100 |
| | M-F | +8** | +20 | +12 | -0 | +3 | -4 |
| Make phone calls for work | M | 89 | 100 | 91 | 89 | 88 | 97 |
| | F | 89 | 93 | 90 | 87 | 88 | 89 |
| | M-F | -0 | +7 | +1 | +2 | +0 | +8 |
| Take notes | M | 87 | 100 | 88 | 87 | 88 | 84 |
| | F | 92 | 95 | 92 | 91 | 96 | 85 |
| | M-F | -5△ | +5 | -4 | -4 | -8 | -1 |
| Proofread | M | 76 | 78 | 76 | 76 | 73 | 85 |
| | F | 89 | 87 | 86 | 93 | 79 | 98 |
| | M-F | -13** | -9 | -10 | -17** | -6 | -13* |
| Type for work | M | 35 | 56 | 33 | 35 | 28 | 44 |
| | F | 56 | 59 | 53 | 56 | 33 | 65 |
| | M-F | -21** | -3 | -20 | -21** | -5 | -21* |
| Keypunch, verify | M | 50 | 12 | 41 | 53 | 53 | 56 |
| | F | 45 | 26 | 41 | 59 | 62 | 65 |
| | M-F | +5 | -14 | -0 | -6 | -9 | -9 |
| Make security checks, guard | M | 74 | 88 | 71 | 74 | 74 | 68 |
| | F | 49 | 45 | 28 | 61 | 61 | 57 |
| | M-F | +25** | +43△ | +43** | +13* | +13 | +11 |

TABLE 18 (continued)

| SET C: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Make decisions | M | 91% | 100% | 94% | 90% | 85% | 99% |
| | F | 91 | 89 | 95 | 90 | 96 | 84 |
| | M-F | -0 | +11 | -1 | -0 | -11 | +15** |
| Read for work | M | 92 | 89 | 97 | 91 | 90 | 93 |
| | F | 94 | 95 | 86 | 95 | 88 | 98 |
| | M-F | -2 | -6 | +11 | -4 | +2 | -5 |
| Develop ideas | M | 92 | 75 | 94 | 93 | 93 | 93 |
| | F | 87 | 86 | 91 | 86 | 79 | 85 |
| | M-F | +5* | -11 | +3 | +7△ | +14△ | +8 |
| Write work reports or letters | M | 83 | 75 | 84 | 82 | 79 | 93 |
| | F | 84 | 84 | 87 | 84 | 75 | 85 |
| | M-F | -1 | -9 | -3 | -2 | +4 | +8 |
| Deal with customers or clients | M | 78 | 100 | 78 | 78 | 70 | 91 |
| | F | 88 | 95 | 93 | 83 | 71 | 81 |
| | M-F | -10** | +5 | -15 | -5 | -1 | +10 |
| Instruct other workers | M | 81 | 100 | 81 | 81 | 78 | 89 |
| | F | 80 | 84 | 77 | 80 | 78 | 84 |
| | M-F | +1 | +16 | +4 | +1 | -0 | +5 |
| Operate a computer | M | 56 | 0 | 47 | 59 | 65 | 49 |
| | F | 46 | 33 | 44 | 56 | 67 | 66 |
| | M-F | +10* | -33 | +3 | +3 | -2 | -17 |
| Order supplies, take inventory | M | 91 | 88 | 84 | 92 | 90 | 99 |
| | F | 91 | 90 | 87 | 93 | 92 | 89 |
| | M-F | -0 | -2 | -3 | -1 | -2 | +10△ |
| Instruct or tutor, patients, clients, Ss | M | 73 | 100 | 85 | 71 | 63 | 81 |
| | F | 80 | 91 | 83 | 71 | 71 | 73 |
| | M-F | -7 | +9 | +2 | -0 | -8 | +8 |
| Supervize patients, clients, Ss | M | 72 | 100 | 84 | 69 | 64 | 77 |
| | F | 81 | 91 | 72 | 78 | 71 | 80 |
| | M-F | -9* | +9 | +12 | -9 | -7 | -3 |
| Repair equipment | M | 48 | 38 | 38 | 49 | 50 | 44 |
| | F | 23 | 25 | 21 | 24 | 42 | 16 |
| | M-F | +25** | +13 | +17 | +25** | +8 | +28** |
| SET D: | | | | | | | |
| Analyze data (Set C, Quest.) | M | 88 | 57 | 82 | 90 | 89 | 92 |
| | F | 77 | 70 | 69 | 85 | 88 | 82 |
| | M-F | +11** | -13 | +13 | +5 | +1 | +10 |
| Design instr. techniques (Set C, Quest.) | M | 57 | 43 | 53 | 58 | 65 | 45 |
| | F | 36 | 26 | 46 | 38 | 48 | 33 |
| | M-F | +21** | +17 | +7 | +20** | +17 | +12 |

more of All men, as compared with All women, reported being well able to lift or carry things, tabulate data, make security checks or guard, develop ideas, operate a computer, repair equipment, analyze data, and design instruments or techniques.

Within the partitioned groups, there were relatively few significant differences; and inspection of Table 18 for consistencies in the direction of differences, whether significant or not, shows general agreement with what we already learned from comparing All men with All women. Certain activities show outstandingly consistent sex difference patterns across groups (if we ignore the unreliable FD group); that is, for the given activity, the same direction of difference prevails in every or nearly every group. The most clearcut example is lifting or carrying, at which more men than women in every group felt competent, and every difference (except FD) was highly significant (1% level).

Among activities not already mentioned above at which more men than women in most groups felt competent (even though not significantly so) are the following: duplicate or Xerox, shelve supplies, clean equipment or animals, collect or sort data, tabulate data, make phone calls, and instruct other workers. The activities at which more of the women in most groups felt competent, and which have not been mentioned previously, include: fill out forms, answer phones and take messages, do errands, deliver mail, operate equipment other than a typewriter, take notes, keypunch or verify, make decisions, read for work, write reports, order supplies, and instruct or tutor patients/clients/students.

The preceeding discussion has indicated the kinds of activities at which male and female students characteristically feel more competent. The statements concerning the consistency in direction of differences were generalizations, to which there were some exceptions. The one such exception that was highly significant (1% level) occurred within the Business group, where the men felt much more competent than the women at making decisions. And there is other similar evidence (although not quite reaching significance)

that male students majoring in Business are more self-confident about their abilities than women Business majors. For example, more of these men felt competent at writing reports, dealing with clients, and ordering supplies and taking inventory. However, contrary to the pattern for All men, the men in Business felt less competent than the women at operating a computer ($p < .12$).

In summary, it appears that the students' self-ratings of competence at the listed work tasks are not independent of their ratings of task appropriateness nor of the work time measures. A fuller intercorrelational analysis of these measures, in a sample designed for that purpose, would help to elucidate the relationships among these variables.

Supervisors' ratings of student performance. Supervisors rated student performance of work activities in relation to the performance of other workers. Table 19 shows the mean scores of supervisors of students in the partitioned groups on the activities of Sets A, B, and C.[1] A mean rating of 2.0 for an activity indicates a (group) judgment that the performance of those students is equivalent to that of other similar employees; the possible range of the mean scores is from 1.0 to 3.0. First, it is obvious that supervisors judged the co-op students very favorably. In the entire

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[1]Table 19 excludes ratings of "not applicable"--i.e., not performed by the student. The percentages of students who did perform any one activity according to the supervisor are comparable to those reported by students on the Log (Table 16). For example, the data of both Tables 16 and 19 indicates that most students "make decisions" at work, but very few "feed patients or animals."

In place of the Set D attributes rated by students, supervisors rated several items concerning work rules and policies; these will be shown separately later.

TABLE 19

ACTIVITIES: SUPERVISORS' MEAN RATINGS OF STUDENTS' WORK PERFORMANCE
(FOR THOSE STUDENTS WHO PERFORMED THE TASK)

| SET A: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Fill out forms, keep records | M | 2.4 | 2.3 | 2.6 | 2.4 | 2.4 | 2.4 |
| | F | 2.5 | 2.6 | 2.4 | 2.6 | 2.3 | 2.7 |
| | M-F | -.1△ | -.3 | +.2 | -.2* | +.1 | -.3* |
| Answer phones, take messages | M | 2.3 | 2.6 | 2.5 | 2.3 | 2.2 | 2.4 |
| | F | 2.6 | 2.7 | 2.5 | 2.5 | 2.4 | 2.6 |
| | M-F | -.3** | -.1 | +0 | -.2** | -.2 | -.2△ |
| File, copy numbers, check | M | 2.4 | (2.0) | 2.5 | 2.4 | 2.4 | 2.4 |
| | F | 2.5 | 2.4 | 2.4 | 2.5 | 2.3 | 2.6 |
| | M-F | -.1 | -.4 | +.1 | -.1 | +.1 | -.2 |
| Duplicate, Xerox | M | 2.4 | (2.2) | 2.5 | 2.3 | 2.3 | 2.4 |
| | F | 2.5 | 2.5 | 2.6 | 2.5 | 2.2 | 2.6 |
| | M-F | -.1△ | -.3 | -.1 | -.2 | +.1 | -.2 |
| Do errands for work | M | 2.5 | 2.6 | 2.8 | 2.5 | 2.4 | 2.6 |
| | F | 2.6 | 2.6 | 2.7 | 2.5 | 2.3 | 2.6 |
| | M-F | -.1 | -0 | +.1 | -0 | +.1 | +0 |
| Lift or carry things | M | 2.3 | (2.0) | 2.5 | 2.3 | 2.1 | 2.5 |
| | F | 2.4 | 2.5 | 2.3 | 2.3 | (2.3) | 2.4 |
| | M-F | -.1 | -.5△ | +.2 | -0 | -.2 | +.1 |
| Stamp, staple, paste | M | 2.4 | (2.2) | 2.6 | 2.3 | 2.1 | 2.3 |
| | F | 2.6 | 2.5 | 2.8 | 2.6 | -- | 2.8 |
| | M-F | -.2* | -.3 | -.2 | -.3* | [NA] | -.5* |
| Shelve supplies | M | 2.4 | (2.5) | 2.6 | 2.3 | 2.4 | 2.3 |
| | F | 2.5 | 2.6 | 2.5 | 2.4 | (2.3) | 2.5 |
| | M-F | -.1 | -.1 | +.1 | -.1 | +.1 | -.2 |
| Clean equipment or animals | M | 2.4 | (2.3) | (2.5) | 2.4 | 2.5 | (2.0) |
| | F | 2.5 | 2.6 | 2.4 | 2.4 | (2.0) | (2.0) |
| | M-F | -.1 | -.3 | +.1 | +0 | +.5 | 0 |
| Deliver mail | M | 2.5 | (2.5) | 2.5 | 2.5 | 2.4 | 2.5 |
| | F | 2.7 | 2.7 | 2.7 | 2.6 | -- | 2.7 |
| | M-F | -.2 | -.2 | -.2 | -.1 | [NA] | -.2 |
| Feed patients or animals | M | 2.6 | -- | -- | (2.3) | -- | -- |
| | F | 2.5 | 2.6 | (2.5) | 2.3 | -- | -- |
| | M-F | +.1 | [NA] | [NA] | 0 | [NA] | [NA] |

| SET B: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Collect or sort data or things | M | 2.5 | 2.4 | 2.6 | 2.5 | 2.5 | 2.5 |
| | F | 2.6 | 2.5 | 2.6 | 2.6 | 2.4 | 2.6 |
| | M-F | -.1 | -.1 | +0 | -.1 | +.1 | -.1 |
| Operate eqpmt. other than typewriter | M | 2.5 | 2.6 | 2.6 | 2.5 | 2.5 | 2.4 |
| | F | 2.5 | 2.5 | 2.4 | 2.5 | 2.6 | 2.5 |
| | M-F | +0 | +1 | +2 | -0 | -.1 | -.1 |
| Tabulate data (by hand or calculator) | M | 2.6 | 2.2 | 2.6 | 2.6 | 2.6 | 2.6 |
| | F | 2.6 | 2.6 | 2.4 | 2.6 | 2.6 | 2.6 |
| | M-F | -0 | -.4△ | +.2 | -0 | +0 | -0 |
| Make phone calls for work | M | 2.3 | 2.5 | 2.6 | 2.3 | 2.3 | 2.3 |
| | F | 2.6 | 2.7 | 2.6 | 2.5 | 2.4 | 2.6 |
| | M-F | -.3** | -.2 | +0 | -.2* | -.1 | -.3△ |
| Take notes | M | 2.3 | (2.3) | 2.4 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 |
| | M-F | -.1 | 0 | +.1 | -.1 | -.1 | +0 |
| Proofread | M | 2.3 | (2.0) | 2.5 | 2.2 | 2.2 | 2.3 |
| | F | 2.5 | 2.6 | 2.5 | 2.4 | 2.4 | 2.4 |
| | M-F | -.2* | -.6△ | +0 | -.2△ | -.2 | -.1 |
| Type for work | M | 2.0 | (1.5) | 2.0 | (2.0) | (1.8) | 2.1 |
| | F | 2.2 | 2.3 | 2.0 | (2.2) | (2.0) | 2.0 |
| | M-F | -.2 | -.8 | 0 | -.2 | -.2 | +.1 |
| Keypunch, verify | M | 2.3 | -- | (2.8) | 2.3 | 2.2 | 2.6 |
| | F | 2.5 | -- | (3.0) | 2.3 | (2.3) | (2.0) |
| | M-F | -.2 | [NA] | -.2 | -0 | -.1 | +.6△ |
| Make security checks, guard | M | 2.5 | -- | (2.5) | 2.5 | (2.5) | 2.4 |
| | F | 2.6 | 2.6 | (2.7) | 2.7 | -- | (3.0) |
| | M-F | -.1 | [NA] | -.2 | -.2 | [NA] | -.6△ |

TABLE 19 (continued)

| | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| SET C: | | ALL | FD | NT | MD | EGR | BUS |
| Make decisions | M | 2.3 | 2.5 | 2.3 | 2.2 | 2.2 | 2.2 |
| | F | 2.4 | 2.5 | 2.4 | 2.4 | 2.8 | 2.5 |
| | M-F | -.1** | -0 | -.1 | -.2Δ | -.6 | -.3 |
| Read for work | M | 2.4 | 2.2 | 2.4 | 2.4 | 2.3 | 2.4 |
| | F | 2.4 | 2.3 | 2.3 | 2.5 | 2.4 | 2.6 |
| | M-F | -0 | -.1 | +.1 | -.1Δ | -.1 | -.2 |
| Develop ideas | M | 2.4 | 2.4 | 2.4 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.4 | 2.5 | 2.3 | 2.4 | 2.2 |
| | M-F | -0 | +0 | -.1 | +0 | -.1 | +.2 |
| Write work reports or letters | M | 2.4 | (2.8) | 2.6 | 2.3 | 2.3 | 2.4 |
| | F | 2.4 | 2.5 | 2.4 | 2.4 | 2.3 | 2.4 |
| | M-F | -0 | +.3 | +.2 | -.1 | +0 | +0 |
| Deal with customers or clients | M | 2.5 | 2.4 | 2.8 | 2.4 | 2.3 | 2.6 |
| | F | 2.6 | 2.6 | 2.8 | 2.5 | 2.2 | 2.6 |
| | M-F | -.1 | -.2 | -0 | -.1 | +.1 | +0 |
| Instruct other workers | M | 2.4 | (2.7) | 2.7 | 2.3 | 2.3 | 2.4 |
| | F | 2.5 | 2.5 | 2.4 | 2.5 | (2.7) | 2.4 |
| | M-F | -.1 | +.2 | +.3 | -.2* | -.4 | -0 |
| Operate a computer | M | 2.5 | -- | 2.2 | 2.6 | 2.6 | 2.5 |
| | F | 2.5 | 2.5 | 2.2 | 2.5 | 2.5 | 2.7 |
| | M-F | +0 | [NA] | 0 | +.1 | +.1 | -.2 |
| Order supplies, take inventory | M | 2.4 | (2.5) | 2.6 | 2.4 | 2.4 | 2.4 |
| | F | 2.6 | 2.7 | 2.9 | 2.4 | 2.2 | 2.7 |
| | M-F | -.2 | -.2 | -.3 | +0 | +.2 | -.3 |
| Instruct or tutor, patients, clients, Ss | M | 2.3 | 2.6 | 2.4 | 2.2 | 2.3 | 2.1 |
| | F | 2.7 | 2.7 | 2.8 | 2.5 | -- | 2.3 |
| | M-F | -.4** | -.1 | -.4 | -.3 | [NA] | -.2 |
| Supervize patients, clients, Ss | M | 2.4 | (2.8) | 2.3 | 2.3 | (3.0) | 2.3 |
| | F | 2.6 | 2.6 | 2.9 | 2.1 | -- | 2.0 |
| | M-F | -.2 | +.2 | -.6** | +.2 | [NA] | +.3 |
| Repair equipment | M | 2.4 | -- | -- | 2.3 | 2.4 | (2.5) |
| | F | 2.3 | (3.0) | (2.3) | 2.2 | 2.2 | (2.0) |
| | M-F | +.1 | [NA] | [NA] | +.1 | +.2 | +.3 |
| SET D: | | | | | | | |
| Analyze data (Set C, Quest.) | M | 2.4 | (2.2) | 2.5 | 2.4 | 2.4 | 2.4 |
| | F | 2.4 | 2.4 | 2.1 | 2.4 | 2.4 | 2.3 |
| | M-F | +0 | -.2 | +.4* | -0 | -0 | +.1 |
| Design instr. techniques (Set C, Quest. | M | 2.3 | (2.3) | 2.2 | 2.3 | 2.2 | 2.5 |
| | F | 2.4 | 2.5 | 2.3 | 2.4 | 2.2 | 2.3 |
| | M-F | -.1 | -.2 | -.1 | -.1 | +0 | +.2 |

table of almost 400 means, all but two are above 2.0,[1] and the great majority fall between 2.3 and 2.7. Thus supervisors considered these co-op students to be much better than regular workers in the same jobs.

With so many high ratings, the supervisors' means cannot provide very much differentiation among groups, nor among the three sets of activities. It is obvious, however, that the supervisors generally rate the women higher than the men. Of the 27 significant differences in Table 19 (10% level or better), 25 are negative--that is, they favor the female students. If we disregard significance levels and count the number of positive and negative differences for each group, we find that negative differences (i.e., higher ratings for women) prevail in most groups (All, 28-, 5+ differences; MD, 26-, 6+; FD, 22-, 5+; Bus, 19-, 12+). Only in the Neutral and Engineering curricular groups is there even a slight predominance in the number of positive differences (NT, 17+, 12-; Egr, 14+, 13-), and the magnitude of these differences favoring the men are very small.

On what activities were there significant or nearly significant (10%) differences between All women and All men? Supervisors rated All women as better than All men at the following activities: fill out forms, answer phones, duplicate/Xerox, stamp/staple/paste, make phone calls, proofread, make decisions, and instruct or tutor patients/clients/students. The only nonzero--and definitely nonsignificant--differences favoring All men were on feeding patients or animals and on repairing equipment. It is interesting to find that supervisors consider female co-op students as superior to the men at <u>both</u> answering phones and making phone calls, whereas the female students rated themselves as slightly more competent than males only at answering phones but not at making phone calls (see Table 18).

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[1]The two means which are below 2.0 are both for typing by men, and involve very small Ns (FD men, N=2, mean 1.5; Egr men, N=4, mean 1.8).

Inspecting the data to see if the supervisors' ratings of particular activities show any consistent pattern in the direction of differences across groups, there are only three such instances: Supervisors rated the women in every group as more able than their male counterparts at making decisions and at instructing or tutoring clients; supervisors rated the men in every group better able (but not significantly so) to repair equipment. Note, however, that none of the Engineering women for whom supervisors' ratings are available instructed or tutored clients, and none of the NT or FD men repaired equipment.

Any comparison of supervisors' ratings with students' self-assessments must be made with considerable caution, since the supervisors rated students only on applicable activities (those they observed or believed the students performed), while the students rated how well they could perform the task, whether or not they did perform it at work. Also, the generally high level of the supervisors' means has the effect of limiting the size of the male-female differences; there was no such limitation on the students' self-ratings, which had a fairly wide range. Keeping these qualifications in mind, we compared (by inspection of Tables 18 and 19) the magnitude and direction of male-female differences as reported by the supervisors and by the students themselves. This comparison reveals many agreements but also some discrepancies in the direction of the differences; however, there were no significant discrepancies in direction between the supervisors' ratings and the students' self-assessments. The one activity where the two sets of ratings seem most discrepant is with respect to lifting or carrying things. Note that this is <u>not</u> an activity on which supervisors' ratings are consistently higher for men in each group, as was true of the men's self-ratings; in fact, overall, supervisors rated the women slightly more able at this activity. If the lifting or carrying involved

in the students' jobs usually did not require great physical strength (and no job involved exclusively manual labor), then perhaps women did perform this task as well as men. The work time evidence suggests that although fewer women than men in every group lifted or carried, where women engaged in these activities at all they spent more work time at them.

In summary, the supervisors regarded the work performance of these co-op students as being much better than that of similar regular employees. Just as was true in our 1977-78 study, the supervisors rated the performance of the women co-ops in the various groups as even better than that of the corresponding men; the ratio of negative to positive differences in Table 19 is about 2:1--that is, in two-thirds of the male-female comparisons, on the average supervisors judged the women's performance as being superior to that of the men.

Effect of sex of supervisor on performance ratings. We saw earlier (Table 3) that about three-fourths of the supervisors who rated students were male, and that male supervisors predominate in every group except FD. The question that arises is whether the ratings made by male and female supervisors show any systematic differences that relate to their own sex in comparison to the sex of the student supervised.

For example, do male supervisors tend to favor (give higher ratings to) male (same-sex) or female (opposite-sex) students, and/or do female supervisors favor the same or opposite sex students? Table 20 presents the mean ratings of students divided into four groups: male students rated by male supervisors (N=204); plus male students rated by female supervisors (N=33) = All men; female students rated by male supervisors (N=105); plus female students rated by female supervisors (N=75) = All women. The data in Table 20 are a reanalysis of the same scores as those of Table 19 (excluding the ratings by 10 supervisors who did not indicate their sex) for All men and All women only; subdivision into traditionality groups by sex of supervisor results in too small Ns for some items.

TABLE 20
MEAN RATINGS OF STUDENT WORK PERFORMANCE BY MALE AND FEMALE SUPERVISORS

| SET A: | | Male Sups. | Female Sups. |
|---|---|---|---|
| Fill out forms, keep records | M | 2.4 | 2.4 |
| | F | 2.5 | 2.6 |
| | M-F | -.1 | -.2 |
| Answer phones, take messages | M | 2.3 | 2.5 |
| | F | 2.4 | 2.8 |
| | M-F | -.1△ | -.3* |
| File, copy numbers, check | M | 2.4 | 2.4 |
| | F | 2.4 | 2.5 |
| | M-F | -0 | -.1 |
| Duplicate, Xerox | M | 2.4 | 2.4 |
| | F | 2.4 | 2.5 |
| | M-F | -0 | -.1 |
| Do errands for work | M | 2.5 | 2.6 |
| | F | 2.4 | 2.8 |
| | M-F | +.1 | -.2△ |
| Lift or carry things | M | 2.3 | 2.4 |
| | F | 2.1 | 2.6 |
| | M-F | +.2 | -.2 |
| Stamp, staple, paste | M | 2.4 | 2.5 |
| | F | 2.6 | 2.7 |
| | M-F | -.2 | -.2 |
| Shelve supplies | M | 2.4 | (2.5) |
| | F | 2.3 | 2.7 |
| | M-F | +.1 | -.2 |
| Clean equipment or animals | M | 2.4 | (2.4) |
| | F | 2.3 | 2.7 |
| | M-F | +.1 | -.3 |
| Deliver mail | M | 2.5 | (2.6) |
| | F | 2.6 | 2.8 |
| | M-F | -.1 | -.2 |
| Feed patients or animals | M | (2.6) | -- |
| | F | (2.5) | (2.5) |
| | M-F | +.1 | [NA] |

| SET B: | | Male Sups. | Female Sups. |
|---|---|---|---|
| Collect or sort data or things | M | 2.5 | 2.6 |
| | F | 2.5 | 2.6 |
| | M-F | -0 | -0 |
| Operate eqpmt other than typewriter | M | 2.5 | 2.5 |
| | F | 2.4 | 2.6 |
| | M-F | +.1 | -.1 |
| Tabulate data (by hand or calculator) | M | 2.5 | 2.7 |
| | F | 2.7 | 2.5 |
| | M-F | -.2 | +.2△ |
| Make phone calls for work | M | 2.3 | 2.5 |
| | F | 2.5 | 2.7 |
| | M-F | -.2* | -.2 |
| Take notes | M | 2.3 | 2.4 |
| | F | 2.3 | 2.6 |
| | M-F | +0 | -.2 |
| Proofread | M | 2.2 | 2.5 |
| | F | 2.4 | 2.8 |
| | M-F | -.2 | -.3 |
| Type for work | M | 1.9 | (2.2) |
| | F | 2.3 | 2.0 |
| | M-F | -.4* | +.2 |
| Keypunch, verify | M | 2.3 | (2.7) |
| | F | (2.4) | (2.5) |
| | M-F | -.1 | +.2 |
| Make security checks, guard | M | 2.5 | (2.7) |
| | F | (2.7) | (2.6) |
| | M-F | -.2 | +.1 |

| SET C: | | Male Sups. | Female Sups. |
|---|---|---|---|
| Design instruments or techniques | M | 2.3 | (2.2) |
| | F | 2.2 | (2.7) |
| | M-F | +.1 | -.5△ |

| SET C: | | Male Sups. | Female Sups. |
|---|---|---|---|
| Make decisions | M | 2.2 | 2.4 |
| | F | 2.3 | 2.5 |
| | M-F | -.1 | -.1 |
| Read for work | M | 2.4 | 2.4 |
| | F | 2.4 | 2.5 |
| | M-F | -0 | -.1 |
| Develop ideas | M | 2.3 | 2.5 |
| | F | 2.3 | 2.5 |
| | M-F | +0 | -0 |
| Write work reports or letters | M | 2.3 | 2.7 |
| | F | 2.4 | 2.5 |
| | M-F | -.1 | +.2 |
| Deal with customers or clients | M | 2.4 | 2.6 |
| | F | 2.5 | 2.7 |
| | M-F | -.1 | -.1 |
| Instruct other workers | M | 2.4 | (2.3) |
| | F | 2.4 | 2.6 |
| | M-F | -0 | -.3 |
| Operate a computer | M | 2.6 | (2.8) |
| | F | 2.4 | (2.5) |
| | M-F | +.2 | +.3 |
| Order supplies, take inventory | M | 2.4 | (2.5) |
| | F | 2.4 | 2.7 |
| | M-F | -0 | -.2 |
| Instruct or tutor patients, clients, Ss | M | 2.3 | (2.3) |
| | F | 2.5 | 2.7 |
| | M-F | -.2 | -.4* |
| Supervise patients, clients, Ss | M | 2.3 | (2.7) |
| | F | 2.5 | 2.7 |
| | M-F | -.2 | +0 |
| Repair equipment | M | 2.4 | (2.0) |
| | F | 2.1 | (2.8) |
| | M-F | +.3 | -.8△ |
| Analyze data | M | 2.4 | 2.4 |
| | F | 2.3 | 2.4 |
| | M-F | +.1 | +0 |

NOTE: In this table, means enclosed in parentheses are based on an N of 10 or less.

In considering these data, an important qualification is that the four groups analyzed represent different sets of students, supervisors, and co-op assignments, so the results could reflect real differences in the work situations rather than, or in addition to, differences attributable to the sex of the supervisor.[1]

The first outstanding finding (Table 20) is that, when the ratings of the male and female supervisors are compared on any one activity, the female supervisors almost invariably rate the students higher than do the male supervisors. This is true irrespective of the sex of the students rated. Among the 65 pairs of means inspected,[2] there were only 6 exceptions to this generalization (3 in which male supervisors rated male students more highly than did the female supervisors and 3 in which the male supervisors rated female students more highly), and in most of these cases at least one mean of the pair was based on a very small N. Although it seems highly improbable that the supervisees of the female supervisors could in actuality be so uniformly better in their work performance than the supervisees of the male supervisors, it is a possibility; however, it is more likely that female supervisors characteristically assign higher ratings.

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[1]The Questionnaire, which asked students the sex of their supervisor, provides a check on the proportionate relations of male to female supervisors. The Supervisor's Evaluation and the Questionnaire (with 527 responding students) agree quite closely; for example, the proportion of male supervisors for the Entire group was 74% from the Supervisor's Evaluation, and 73% as reported by the students on the Questionnaire; for All men, the figures were 86% Supervisor Evaluation and 88% Questionnaire; for All women, 58% Supervisor Evaluation and 53% Questionnaire.

[2]There are 33 activities listed in the table, which could yield 66 pairs of means for male and female supervisors. However, there were no ratings by female supervisors of any male students feeding patients or animals, thus leaving a total of 65 pairs.

Next we can examine the direction of the mean differences between male and female students, as rated by male and by female supervisors. By doing this, we are disregarding the higher level of the female supervisors' ratings, and asking whether female and male supervisors perceive the same magnitude and direction of difference between male and female students. That is, do the supervisors agree generally that the performance of the female co-ops is better than that of male co-ops (or vice versa)? Or does this vary depending on the activity? Again there are 65 differences available for inspection, 33 for male supervisors and 32 for female supervisors.

The lowest mean in the whole table is 1.9--the male supervisors' estimate of how well male students type for work (See Table 20). All other means range between 2.0 and 2.8, or are in effect, at the top half of the scale; also, on several activities the number of ratings by female supervisors is quite low. Both these factors reduce the likelihood that the ratings will differentiate significantly between male and female students in terms of magnitude of differences. It is not surprising, therefore, to find that only 4 of the 65 differences are significant (5% level); all of these favor the female co-ops. Male supervisors considered women significantly better than men at making phone calls and at typing, and female supervisors considered the women significantly better than the men at answering phones and taking messages, and at instructing or tutoring patients/clients/students.

Because of the limitation on the magnitude of the differences, their direction may be of greater interest than their size. The first point to note is that for supervisors of either sex, the preponderance of the ratings favors the women students. Male supervisors rate the women higher (more able) on two-thirds of the activities, and female supervisors do so on three-fourths of the activities. Another question these data can answer is

whether the two groups of supervisors agree as to which sex is superior on specific activities. Of the 32 activities for this comparison, the two groups of supervisors agreed as to the direction of the male-female student difference on 18 activities (56%). The women's performance was rated as better than the men's by both groups on 16 activities, and the male students were rated better on 2 activities (namely, operating a computer and analyzing data). The 16 activities at which the women performed better, in the opinion of both male and female supervisors, include three of the four activities where there were significant differences (answering phones, making phone calls, and instructing or tutoring clients), but not typing--probably because very few female supervisors rated any male students who typed. The other 12 activities at which the two groups of supervisors agreed that the women excelled are as follows: fill out forms, file/copy/check, duplicate/Xerox, stamp/staple/paste, deliver mail, collect/sort data, proofread, make decisions, read for work, deal with clients, instruct other workers, and order supplies.

On the remaining 14 of the 32 activities listed in Table 20, the supervisors disagreed about the direction of the male-female student difference; however, 9 of these involved means based on very small Ns or a difference of zero (whether plus or minus). Thus there are just 5 activities on which there was disagreement, and none of these involved a mean difference larger than .2. Female supervisors rate the performance of their male supervisees as better than that of their female students at tabulating data (10% level of significance) and at writing work reports or letters, and poorer at doing errands (10% level), lifting or carrying, and operating equipment other than a typewriter.

In conclusion, the supervisors' sex influenced how they assessed student performance, in that female supervisors assigned higher ratings than male supervisors to both same- and opposite-sex students. Secondly, both groups of supervisors rated the

performance of female co-op students as better than that of the men on a large majority of activities, and there were few (and no significant) disagreements as to the direction of the male-female students differences on particular activities.

Students' Preferences as to Sex of Supervisor

On the Questionnaire, after asking the sex of the student's supervisor, we asked whether they would prefer to be supervised by a man or a woman. Even though we intentionally provided no other choice, several students wrote in stating that they had no preference (9% M, 6% F) and in addition, a relatively high proportion did not respond (7% M, 9% F). A statement of "no preference" was most common in the NT and Business groups (12% and 10%, respectively, of the respondents in those groups).

Of the students who indicated a preference, comparison of the actual and preferred sex of supervisor shows the following outcomes: 90 percent of male students with a male supervisor preferred a male supervisor, in marked contrast to 61 percent of the male students with a female supervisor who stated a preference for a male. For female students who had a male supervisor, 79 percent preferred a male; while for women with a female supervisor, this figure is 65 percent. Thus the majority of students preferred a supervisor of the same sex as their actual supervisor. More than two-thirds (70%) of the Entire group actually had a same-sex supervisor.

The students, regardless of their own sex, had a somewhat greater preference for a male than for a female supervisor, and as we saw, the number of male supervisors in our sample is much larger than the number of females. The FD women students, who had the highest proportion of female supervisors (78%), also had the highest proportion of preference for a female supervisor (59%); but, as the difference between these percentages indicates, some of them would rather have had a male supervisor. Of the FD men, half had a male supervisor, but 71 percent would have preferred one. At

the other extreme are the Engineering women. All their supervisors were male, and of the women students, as a group they showed the greatest preference for a male supervisor (87%). As can be expected, most of the male students in the partitioned groups showed a very strong preference for a male supervisor; this was especially true of the MD and Engineering men, and least so for the NT men, of whom only 60 percent said they preferred being supervised by a man.

In every group, the women's choices show a more nearly equal balance between preference for female and male supervisors than do the men's. But the results overall (which should not be interpreted as reflecting a student's satisfaction with a particular supervisor) do suggest that students accept the sex of the authority figures with whom they work as those with whom they would prefer to work. This is clearly evident in the preferences of the Neutral men and MD women: The Neutral men showed less partiality for a male supervisor than did the MD women--a result in accord with the actual distribution of male and female supervisors.

Two conclusions seem warranted. First, just as women are more rapidly moving into traditionally male fields than are men into traditionally female ones, so too do they seem to exhibit more open attitudes. Second, these outcomes similar to those regarding the appropriateness of work tasks, underscore the importance of an early adult work experience in its impact on the workers' (i.e., co-op students') attitudes, preferences, and satisfaction.

Personal Characteristics of Co-op Students

A list of 40 personal qualities was presented to the students and the supervisors, asking each group to rate (on a 3-point scale like the supervisor's scale of Tables 19 and 20) whether the student was below or above average. Besides rating themselves on these qualities, the students also indicated what they thought

their supervisor felt about them. Table 21, page 98 and 99, shows the means of these three sets of ratings for All men and All women.[1]

The first thing to note about Table 21 is the amazing degree of similarity among the three sets of mean ratings on every quality. The one dissonant outcome is that supervisors rate the attractiveness of the women students much higher than the women rate themselves; in this connection, it seems relevant to remember that male supervisors were in the majority. The next thing of interest about these data is that almost all the mean ratings are above the midpoint of the scale. The only means below 2.0 are for qualities where it is probably desirable to be slightly below average (aggressive, talkative, shy, emotional, and temperamental), or where the quality may be irrelevant to the job (artistic). The third general comment that can be made is that the students' views of how their supervisors perceive them is lower than how they view themselves, but in this opinion the students are wrong, since the supervisors assign higher ratings that the students believe they would.

The highest means in the table presents the co-op student as reliable, open to learning new things, able to work well alone and with others, intelligent, curious, ambitious, and considerate. In the opinion of both the students and their supervisors (inspecting the significant differences between the means for women and men co-ops), women are somewhat neater, possibly more efficient and verbal, more intuitive, feel more able to advance rapidly and to work well both alone and with others, are more sociable (and less shy), more emotional, sensitive, generous, patient, considerate, gentle, sympathetic, tactful, artistic, attractive, and fashionable. The men, on the other hand, appear somewhat more self-confident, competitive, and aggressive, and possibly more curious, but neither particularly strong nor assertive.

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[1]Means and significance tests for the other analytic groups were also obtained and are available for examination in our offices.

TABLE 21

MEAN RATINGS OF STUDENTS' PERSONAL QUALITIES:
STUDENT SELF-RATING, STUDENT VIEW OF SUPERVISOR'S PERCEPTION, AND SUPERVISOR'S ASSESSMENT

| PERSONAL QUALITIES: | | S's Self Rating | S's view of Sup.'s percpn. | Sup.'s Assess-ment |
|---|---|---|---|---|
| Productive | M | 2.5 | 2.4 | 2.5 |
| | F | 2.5 | 2.4 | 2.6 |
| | M-F | +0 | -0 | -.1 |
| Reliable, responsible | M | 2.8 | 2.6 | 2.7 |
| | F | 2.8 | 2.6 | 2.7 |
| | M-F | -0 | -0 | -0 |
| Neat | M | 2.3 | 2.2 | 2.3 |
| | F | 2.4 | 2.3 | 2.5 |
| | M-F | -.1** | -.1** | -.2** |
| Efficient | M | 2.5 | 2.4 | 2.5 |
| | F | 2.5 | 2.5 | 2.6 |
| | M-F | +0 | -.1* | -.1 |
| Intelligent | M | 2.6 | 2.4 | 2.6 |
| | F | 2.5 | 2.4 | 2.7 |
| | M-F | +.1 | -0 | -.1 |
| Logical | M | 2.5 | 2.2 | 2.5 |
| | F | 2.4 | 2.3 | 2.5 |
| | M-F | +.1$^{\Delta}$ | -.1 | +0 |
| Objective | M | 2.3 | 2.2 | 2.3 |
| | F | 2.2 | 2.2 | 2.4 |
| | M-F | +.1$^{\Delta}$ | +0 | -.1 |
| Curious | M | 2.6 | 2.3 | 2.4 |
| | F | 2.5 | 2.3 | 2.5 |
| | M-F | +.1* | +0 | -.1 |
| Creative, imaginative | M | 2.3 | 2.2 | 2.2 |
| | F | 2.3 | 2.3 | 2.3 |
| | M-F | -0 | -.1$^{\Delta}$ | -.1 |
| Intuitive | M | 2.3 | 2.2 | 2.3 |
| | F | 2.4 | 2.2 | 2.3 |
| | M-F | -.1* | -0 | -0 |

| PERSONAL QUALITIES: | | S's Self Rating | S's view of Sup.'s percpn. | Sup.'s Assess-ment |
|---|---|---|---|---|
| Able to ad-vance rapidly | M | 2.5 | 2.4 | 2.5 |
| | F | 2.5 | 2.5 | 2.5 |
| | M-F | -0 | -.1* | -0 |
| Open to learn-ing new things | M | 2.8 | 2.6 | 2.7 |
| | F | 2.8 | 2.6 | 2.7 |
| | M-F | -0 | -0 | -0 |
| Open to criticism | M | 2.3 | 2.2 | 2.3 |
| | F | 2.3 | 2.3 | 2.3 |
| | M-F | +0 | -.1 | -0 |
| Self-confident | M | 2.3 | 2.2 | 2.4 |
| | F | 2.2 | 2.2 | 2.3 |
| | M-F | +.1* | +0$^{\Delta}$ | +.1 |
| Energetic | M | 2.4 | 2.3 | 2.5 |
| | F | 2.4 | 2.4 | 2.5 |
| | M-F | -0 | -.1 | +0 |
| Ambitious | M | 2.6 | 2.3 | 2.5 |
| | F | 2.5 | 2.3 | 2.4 |
| | M-F | +.1 | -0 | +.1 |
| Competitive | M | 2.4 | 2.3 | 2.3 |
| | F | 2.2 | 2.1 | 2.2 |
| | M-F | +.2** | +.2** | +.1* |
| Aggressive | M | 2.0 | 2.1 | 2.1 |
| | F | 1.9 | 1.9 | 2.0 |
| | M-F | +.1* | +.2** | +.1* |
| Assertive | M | 2.2 | 2.1 | 2.2 |
| | F | 2.2 | 2.2 | 2.2 |
| | M-F | -0 | -.1 | -0 |
| Strong | M | 2.2 | 2.1 | 2.2 |
| | F | 2.2 | 2.1 | 2.2 |
| | M-F | +0 | +0 | +0 |

TABLE 21 (continued)

| PERSONAL QUALITIES: | | S's Self Rating | S's view of Sup.'s percpn. | Sup.'s Assess-ment |
|---|---|---|---|---|
| Able to work well alone | M | 2.7 | 2.5 | 2.6 |
| | F | 2.7 | 2.6 | 2.6 |
| | M-F | -0 | -.1* | -0 |
| Able to work well with others | M | 2.5 | 2.4 | 2.6 |
| | F | 2.7 | 2.6 | 2.7 |
| | M-F | -.2** | -.2** | -.1 |
| Willing to do favors for co-workers | M | 2.5 | 2.4 | 2.5 |
| | F | 2.5 | 2.5 | 2.5 |
| | M-F | -0 | -.1△ | -0 |
| Willing to do favors for supervisors | M | 2.4 | 2.4 | 2.5 |
| | F | 2.5 | 2.4 | 2.5 |
| | M-F | -.1 | -0 | -0 |
| Verbal | M | 2.1 | 2.1 | 2.2 |
| | F | 2.2 | 2.0 | 2.3 |
| | M-F | -.1* | +.1 | -.1 |
| Talkative | M | 1.9 | 2.0 | 2.0 |
| | F | 2.0 | 2.0 | 2.1 |
| | M-F | -.1^ | +0 | -.1 |
| Sociable | M | 2.2 | 2.2 | 2.4 |
| | F | 2.4 | 2.3 | 2.5 |
| | M-F | -.2** | -.1 | -.1* |
| Shy | M | 1.9 | 1.9 | 1.7 |
| | F | 1.8 | 1.8 | 1.7 |
| | M-F | +.1** | +.1* | -0 |
| Emotional | M | 1.9 | 1.9 | 1.9 |
| | F | 2.0 | 1.9 | 1.9 |
| | M-F | -.1* | -0 | -0 |
| Tempera-mental | M | 1.8 | 1.9 | 1.8 |
| | F | 1.8 | 1.8 | 1.8 |
| | M-F | -0 | +.1 | -0 |

| PERSONAL QUALITIES: | | S's Self Rating | S's view of Sup.'s percpn. | Sup.'s Assess-ment |
|---|---|---|---|---|
| Sensitive | M | 2.3 | 2.1 | 2.2 |
| | F | 2.5 | 2.2 | 2.3 |
| | M-F | -.2** | -.1** | -.1** |
| Generous | M | 2.3 | 2.2 | 2.3 |
| | F | 2.4 | 2.3 | 2.4 |
| | M-F | -.1** | -.1** | -.1** |
| Patient | M | 2.2 | 2.2 | 2.3 |
| | F | 2.4 | 2.3 | 2.5 |
| | M-F | -.2** | -.1** | -.2** |
| Considerate | M | 2.6 | 2.4 | 2.6 |
| | F | 2.7 | 2.5 | 2.8 |
| | M-F | -.1** | -.1** | -.2** |
| Gentle | M | 2.3 | 2.1 | 2.2 |
| | F | 2.4 | 2.2 | 2.4 |
| | M-F | -.1** | -.1* | -.2** |
| Sympathetic | M | 2.3 | 2.1 | 2.2 |
| | F | 2.5 | 2.2 | 2.3 |
| | M-F | -.2** | -.1** | -.1** |
| Tactful | M | 2.2 | 2.1 | 2.3 |
| | F | 2.3 | 2.2 | 2.5 |
| | M-F | -.1 | -.1 | -.2** |
| Artistic | M | 1.8 | 2.0 | 2.0 |
| | F | 2.0 | 2.0 | 2.2 |
| | M-F | -.2* | -0 | -.2** |
| Attractive | M | 2.2 | 2.1 | 2.3 |
| | F | 2.2 | 2.2 | 2.6 |
| | M-F | -0 | -.1** | -.3** |
| Fashionable | M | 2.0 | 2.0 | 2.1 |
| | F | 2.0 | 2.1 | 2.2 |
| | M-F | -0 | -.1 | -.1* |

The listing of male and female qualities read almost like a catalog of stereotypes. While this may be a true representation of the differences in personal qualities of these male and female workers, another not necessarily contradictory explanation (since stereotypes have some basis in fact) is that the ratings made by both the students and the supervisors are strongly influenced by the prevailing notions about personality characteristics by men and women--and especially those pertaining to women. Since the personal qualities that were found to be more typically female is five times as long as those that were typically male (20 F, 4 M), it may suggest that stereotypes about men may be diminishing more rapidly in our society than stereotypes about women.

Supervisors made one other set of ratings, and that was whether they considered each quality an asset, a liability, or not relevant to the student's job. The results can be dealt with briefly, since they are as would be expected. The only qualities receiving appreciable proportions of votes as liabilities are shy, emotional, and temperamental--the same qualities that the co-ops have less of than the average similar worker, and the first two of which are more characteristic of women. Qualities that many supervisors (more than a third) considered irrelevant to the student's job (listed in decreasing order) are fashionable, attractive, artistic, strong, gentle, generous, sympathetic, talkative, shy, and sensitive--again, many qualities that women co-ops were rated as higher on than men.

Of the characteristics valued, more than 90 percent of the supervisors considered it an asset to be (in decreasing order): reliable and responsible, able to work well both alone and with others, productive, efficient, open to learning new things, intelligent, logical, energetic, considerate, self-confident, objective, tactful, open to criticism, ambitious, and able to advance rapidly. Such a collection of virtues should surely rouse little disagreement from anyone, although some employers

might place them in a different rank order. It is interesting to note that intelligence is not at the top of this list; in fact, it ranks ninth among these 16 qualities. Perhaps the supervisors take for granted a goodly amount of intelligence in these college students; but we suspect that, beyond a necessary amount of intelligence, some of the qualities they ranked higher may indeed be more valuable in getting work accomplished.

Students made a somewhat comparable set of ratings--of how important each quality was to their job. Every quality that was viewed as important by 90 percent or more of the students is contained in the top half of the supervisors' list of assets; thus, the students' list was shorter. The seven qualities named by students, in decreasing order, are: reliable, productive, efficient, open to learning new things, able to work well both with others and alone, and logical. Of the nine other qualities rated highly by supervisors, at least 70 percent of the students also rated them important.

To summarize, the congruence between student and supervisor ratings suggests that the students' rather high self-appraisals were realistic, but they tended to slightly underrate their supervisor's opinion of them. The students also appear to have established a solid groundwork of understanding what personal qualities matter to an employer.

Compliance with Work Policies

What did the students do of a personal nature during the work day? Personal phone calls were most common (Entire group, 43%) followed by reading personal material (34%), doing personal errands (29%), writing (19%), and typing (7%). Note that these activities could have occurred during meal time or rest breaks. At most, fewer than half the students reported spending time on any of the personal activities we asked about. Of those students who did spend time on these activities, the amount of time reported was very low; and sex differences were very small, except that in every group more men did personal errands.

Work-related personal behavior: Students' views. Questions about specific organizational behaviors (compliance with work policies) furnish more details about the kind of workers co-op students are. The students were asked whether their supervisor had ever spoken to them about certain behaviors and they also rated, for each of 12 items, their opinion of their supervisor's degree of tolerance (from 1 = very tolerant to 3 = not tolerant).

The left side of Table 22, on the following page, presents the percentages of students reporting that their supervisor had spoken to them about each item of behavior. The behaviors are listed in decreasing order of frequency for the Entire group (with the percentage for the Entire group in parentheses). More students were spoken to about arriving late (12%), followed by: leaving early (10%), socializing during working hours (9%), wearing improper attire (7%), making personal phone calls (7%), doing school-related things at work (7%), doing personal things at work (5%), being absent regularly (5%), taking unassigned lunch breaks (5%), eating or smoking in inappropriate areas (4%), taking unassigned rest breaks (4%), and receiving personal phone calls (3%). From a quick overview of this table, the percentages seem low; that is, relatively few students report having been called to task about poor or inappropriate work habits. The scores may not be low in an absolute sense, since the question did not ask for a comparison with co-workers. But the fact is that, of the 144 percentages in the table (12 items x 6 groups x 2 sexes), about 15 percent involved only 10 percent or more students. And, from the wording of the question, students who answered Yes could have been spoken to only once.

In general, the men were spoken to more often than the comparable women; in 65 percent of the 72 M-F differences men have the higher score, and the few significant differences also follow this pattern. In every group, more of the men had been spoken to about improper attire, although only for All men and MD men were the sex differences statistically significant. (These

same two groups of men also significantly differed from the corresponding women with respect to leaving early--perhaps because they considered it as compensation for their greater amount of overtime.) The results concerning attire fit the usual stereotype that women are more concerned with clothing and appearance than men. They also could mean, however, especially considering that the significant differences occur in the All and MD groups (although in every group more men reported that their supervisor had spoken to them about their attire), that men co-ops were taking fewer safety precautions than women.

For the same 12 behavior items, the right half of Table 22 summarizes the students' opinions (mean ratings) concerning how intolerant they feel their supervisor is of each behavior (maximum possible intolerance score = 3.0). For the Entire group, students felt supervisors to be most intolerant (the means for the Entire group are in parentheses) about being absent regularly (2.5), followed in decreasing rank order by taking unassigned lunch breaks (2.1), wearing improper attire (2.0), inappropriate eating or smoking (2.0), doing personal things (2.0), taking unassigned rest breaks (1.9), doing school-related things (1.8), leaving early (1.7), socializing in work hours (1.7), making personal phone calls (1.6), arriving late (1.6), and receiving personal phone calls (1.6).

The two rank orders (by intolerance and by having been spoken to) differ considerably. A student's rating of the supervisor's intolerance is probably partly influenced by her or his own judgment of the seriousness of the problem, as well as by its frequency of occurrence. With this point in mind, the obtained rank order appears to reflect a realistic attitude on the part of the students. Thus being absent regularly or taking unexpected breaks could be serious problems to a supervisor and to one's work, while arriving late or receiving personal phone calls could be relatively unimportant if that is the acceptable standard in the organization.

TABLE 22

COMPLIANCE WITH 12 ITEMS OF WORK POLICIES: PERCENTAGE OF STUDENTS SPOKEN TO; SUPERVISOR AND STUDENTS MEAN RATINGS OF SUPERVISOR'S INTOLERANCE

PERCENTAGE OF STUDENTS WHO SAID THEIR SUPERVISOR SPOKE TO THEM

| ACTIVITY: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Arriving late | M | 12% | 14% | 21% | 11% | 11% | 8% |
| | F | 10 | 9 | 12 | 10 | 13 | 6 |
| | M-F | +2 | +5 | +9 | +1 | -2 | +2 |
| Leaving early | M | 12 | 0 | 9 | 13 | 15 | 11 |
| | F | 6 | 5 | 15 | 4 | 4 | 4 |
| | M-F | +6* | -5 | -6 | +9** | +11 | +7 |
| Socializing in work hours | M | 10 | 13 | 6 | 10 | 10 | 7 |
| | F | 7 | 7 | 5 | 9 | 8 | 10 |
| | M-F | +3 | +6 | +1 | +1 | +2 | -3 |
| Wearing improper attire | M | 11 | 13 | 12 | 11 | 9 | 12 |
| | F | 3 | 2 | 8 | 3 | 4 | 4 |
| | M-F | +8** | +11 | +4 | +8* | +5 | +8 |
| Making personal phone calls | M | 8 | 0 | 9 | 8 | 9 | 5 |
| | F | 7 | 5 | 16 | 5 | 4 | 8 |
| | M-F | +1 | -5 | -7 | +3 | +5 | -3 |
| Doing school-related things at work | M | 8 | 0 | 12 | 8 | 9 | 3 |
| | F | 6 | 6 | 2 | 8 | 13 | 8 |
| | M-F | +2 | -6 | +10 | +0 | -4 | -5 |
| Doing personal things at work | M | 6 | 14 | 9 | 6 | 7 | 5 |
| | F | 3 | 3 | 5 | 3 | 4 | 2 |
| | M-F | +3 | +11 | +4 | +3 | +3 | +3 |
| Being absent regularly | M | 5 | 0 | 6 | 5 | 4 | 5 |
| | F | 4 | 0 | 7 | 5 | 8 | 6 |
| | M-F | +1 | 0 | -1 | -0 | -4 | -1 |
| Taking unassigned lunch breaks | M | 5 | 0 | 6 | 6 | 6 | 4 |
| | F | 4 | 5 | 5 | 3 | 0 | 2 |
| | M-F | +1 | -5 | +1 | +3 | +6 | +2 |
| Inappropriate eating or smoking | M | 6 | 0 | 9 | 6 | 6 | 3 |
| | F | 2 | 2 | 3 | 2 | 0 | 4 |
| | M-F | +4△ | -2 | +6 | +4 | +6 | -1 |
| Taking unassinged rest breaks | M | 4 | 0 | 9 | 3 | 4 | 1 |
| | F | 4 | 3 | 5 | 3 | 0 | 2 |
| | M-F | +0 | -3 | +4 | +0 | +4 | -1 |
| Receiving personal phone calls | M | 3 | 0 | 3 | 3 | 4 | 3 |
| | F | 4 | 3 | 7 | 3 | 0 | 6 |
| | M-F | -1 | -3 | -4 | -0 | +4 | -3 |

MEAN STUDENT RATINGS OF SUPERVISOR'S INTOLERANCE

| ACTIVITY: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Arriving late | M | 1.6 | 1.9 | 1.6 | 1.6 | 1.6 | 1.6 |
| | F | 1.7 | 1.7 | 1.6 | 1.6 | 1.7 | 1.5 |
| | M-F | -.1 | +.2 | -.0 | -.0 | -.1 | +.1 |
| Leaving early | M | 1.7 | 1.6 | 1.6 | 1.8 | 1.7 | 1.8 |
| | F | 1.7 | 1.8 | 1.7 | 1.7 | 1.9 | 1.6 |
| | M-F | +.0 | -.2 | -.1 | +.1 | -.2 | +.2 |
| Socializing in work hours | M | 1.7 | 1.4 | 1.6 | 1.7 | 1.7 | 1.8 |
| | F | 1.7 | 1.8 | 1.5 | 1.8 | 1.8 | 1.7 |
| | M-F | -.0 | -.4 | +.1 | -.1 | -.1 | +.1 |
| Wearing improper attire | M | 2.0 | 1.8 | 1.9 | 2.0 | 2.0 | 2.1 |
| | F | 2.1 | 2.3 | 1.9 | 2.1 | 2.1 | 2.1 |
| | M-F | -.1 | -.5 | +.0 | -.1 | -.1 | -.0 |
| Making personal phone calls | M | 1.6 | 1.4 | 1.7 | 1.6 | 1.6 | 1.6 |
| | F | 1.7 | 1.8 | 1.6 | 1.7 | 1.5 | 1.8 |
| | M-F | -.1 | -.4 | +.1 | -.1 | +.1 | -.2 |
| Doing school-related things at work | M | 1.8 | 1.4 | 1.7 | 1.8 | 1.8 | 1.9 |
| | F | 1.8 | 1.7 | 1.8 | 1.8 | 1.5 | 1.8 |
| | M-F | +.0 | -.3 | -.1 | +.0 | +.3 | +.1 |
| Doing personal things at work | M | 2.0 | 1.6 | 1.9 | 2.0 | 2.0 | 2.1 |
| | F | 2.0 | 2.1 | 1.9 | 2.0 | 1.8 | 1.9 |
| | M-F | -.0 | -.5 | -.0 | -.0 | +.2 | +.2 |
| Being absent regularly | M | 2.5 | 2.4 | 2.3 | 2.5 | 2.5 | 2.4 |
| | F | 2.5 | 2.6 | 2.4 | 2.5 | 2.6 | 2.5 |
| | M-F | -.0 | -.2 | -.1 | +.0 | -.1 | -.1 |
| Taking unassigned lunch breaks | M | 2.1 | 2.0 | 1.9 | 2.1 | 2.1 | 2.2 |
| | F | 2.1 | 2.3 | 2.0 | 2.1 | 2.1 | 2.1 |
| | M-F | -.0 | -.3 | -.1 | +.0 | -.0 | +.1 |
| Inappropriate eating or smoking | M | 1.9 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 |
| | F | 2.1 | 2.4 | 2.0 | 2.0 | 2.0 | 1.9 |
| | M-F | -.2* | -.2 | -.1 | -.1 | -.1 | -.0 |
| Taking unassigned rest breaks | M | 1.9 | 1.8 | 1.9 | 1.9 | 1.8 | 2.2 |
| | F | 2.0 | 2.2 | 1.7 | 2.0 | 1.9 | 2.0 |
| | M-F | -.1 | -.4 | +.2 | -.1 | -.1 | +.2 |
| Receiving personal phone calls | M | 1.6 | 1.6 | 1.5 | 1.6 | 1.6 | 1.6 |
| | F | 1.7 | 1.7 | 1.6 | 1.7 | 1.5 | 1.6 |
| | M-F | -.1 | -.1 | -.1 | -.1 | +.1 | -.0 |

Only one sex difference (out of 72) was significant; namely, All women felt their supervisors would be less tolerant of inappropriate eating or smoking than did All men (1.9 M, 2.1 F). One such significant difference could have arisen by chance, but the really notable finding is that, while generally fewer women had been spoken to about any one of the items by their supervisor, in most groups the women rated their supervisors as less tolerant than did the men students (69% of the M-F differences in the right half of Table 22 are negative). The FD women stand out especially; on most of the items, they rate their supervisor as more intolerant than any other group, male or female. Unfortunately, there are not enough FD men to rely on their results, but perhaps because of the kind of work done by FD students, often involving patients and scheduled appointments, their supervisors truly are more strict than supervisors of other students.

We saw earlier that, in comparison with similar co-workers, the women felt they complied slightly better with work rules than the men, and would expect slightly less trouble if they did not comply. A possible interpretation is that women do comply better than men because they view supervisors as less tolerant--they anticipate more criticism and avert it by greater compliance.

Work-related personal behavior: Supervisors' views. What do their supervisors think about the aspects of students' behavior related to compliance with organizational policy? Supervisors rated several items involving work policies (on a 3-point scale, from below to above average. The behaviors rated (in decreasing order, with means for the Entire group) were: follows rules about taking rest breaks (2.7), follows rules for telephone use (2.7), maintains good attendance (2.7), understands and carries out instructions (2.6), follows rules about doing personal work (2.6), arrives on time (2.6), leaves work at appropriate time (2.6), wears proper attire (2.5), and does necessary drudge work (2.5). As can be seen, just as with the supervisors' assessment of student

work activities (Table 19), all the compliance ratings were very high.

Looking at the means for all analytic groups, the range was from 2.2 to 2.9, with about two-thirds (63%) being above 2.5. The very high level of these ratings permits little differentiation among groups or between the men and women within a group. Of one conclusion there is no doubt: in terms of these measured behaviors, the supervisors regard the co-op students as highly superior to the average worker.

Benefits of the Co-op Work Experience and Relation to Career Choice

In this final section we will examine whether or not first-time co-op students found their work assignment useful, and specifically how so; and look at their career choices and the factors they felt influenced their decision.

Usefulness of the co-op work experience. The first question we want to answer by inspecting the results in Table 23 (page 107) is how useful did the sample students find their co-op placement; and second, were there differences between females and males? Using a 3-point scale, the students rated co-op's usefulness for achieving each of the 14 purposes; of the 168 mean rating scores summarized in the table, the lowest mean is 2.0, or "somewhat useful." Thus, it is quite clear that the co-op work experience is a useful one.

More specifically, nearly everyone found their first co-op job very useful in providing general work experience: however, the Engineering women are somewhat of an exception. Their mean of 2.6, while also fairly high, is lower than that for any other group, and definitely lower (10% level) than for the Engineering men. Most students found their co-op job quite useful for: learning about a specific career, improving general work skills (but Engineering women clearly the least so), learning about the "real" world, and how to work with others. They found their jobs to be of lesser, but still appreciable, usefulness for the following purposes: learn-

TABLE 23

STUDENT RATINGS OF THE USEFULNESS OF THEIR CO-OP PLACEMENT FOR SPECIFIED PURPOSES

| PURPOSES: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Provide general work experience | M | 2.8 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 |
| | F | 2.8 | 2.8 | 2.8 | 2.8 | 2.6 | 2.8 |
| | M-F | +0 | +.1 | +0 | +0 | +.2△ | +0 |
| Learn about a specific career | M | 2.7 | 2.9 | 2.8 | 2.6 | 2.6 | 2.8 |
| | F | 2.6 | 2.7 | 2.5 | 2.6 | 2.6 | 2.5 |
| | M-F | +.1 | +.2 | +.3△ | +0 | -0 | +.3* |
| Improve general work skills | M | 2.6 | 2.8 | 2.6 | 2.6 | 2.6 | 2.6 |
| | F | 2.6 | 2.7 | 2.5 | 2.6 | 2.2 | 2.7 |
| | M-F | +0 | +.1 | +.1 | -0 | +.4** | -.1 |
| Learn about the "real" world | M | 2.6 | 2.2 | 2.5 | 2.6 | 2.6 | 2.6 |
| | F | 2.6 | 2.4 | 2.6 | 2.7 | 2.6 | 2.7 |
| | M-F | -0 | -.2 | -.1 | -.1 | +0 | -.1 |
| Learn how to work with others | M | 2.5 | 2.9 | 2.4 | 2.5 | 2.5 | 2.6 |
| | F | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.7 |
| | M-F | -.1△ | +.3 | -.2△ | -.1 | -.1 | -.1 |
| Learn to accept responsibility | M | 2.5 | 2.8 | 2.6 | 2.4 | 2.4 | 2.6 |
| | F | 2.5 | 2.7 | 2.5 | 2.5 | 2.3 | 2.6 |
| | M-F | -0 | +.1 | +.1 | -.1 | +.1 | -0 |
| Make you feel more independent | M | 2.4 | 2.6 | 2.4 | 2.4 | 2.5 | 2.3 |
| | F | 2.5 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 |
| | M-F | -.1 | +.2 | +0 | -.2* | -.1 | -.3* |
| Learn about strengths and weaknesses | M | 2.4 | 2.8 | 2.5 | 2.4 | 2.4 | 2.4 |
| | F | 2.5 | 2.6 | 2.5 | 2.4 | 2.5 | 2.3 |
| | M-F | -.1 | +.2 | -0 | -0 | -.1 | +.1 |
| Explore/test your career choice | M | 2.5 | 2.9 | 2.4 | 2.5 | 2.5 | 2.4 |
| | F | 2.4 | 2.5 | 2.4 | 2.5 | 2.6 | 2.4 |
| | M-F | +.1 | +.4△ | +0 | -0 | -.1 | +0 |
| Improve specific career skills | M | 2.4 | 2.7 | 2.5 | 2.4 | 2.3 | 2.4 |
| | F | 2.3 | 2.5 | 2.3 | 2.3 | 2.2 | 2.3 |
| | M-F | +.1 | +.2 | +.2 | +.1 | +.1 | +.1 |
| Learn about job opportunities | M | 2.4 | 2.3 | 2.3 | 2.4 | 2.5 | 2.4 |
| | F | 2.3 | 2.2 | 2.4 | 2.4 | 2.4 | 2.3 |
| | M-F | +.1 | +.1 | -.1 | +0 | +.1 | +.1 |
| Make contacts for future employment | M | 2.3 | 2.7 | 2.4 | 2.3 | 2.3 | 2.3 |
| | F | 2.2 | 2.2 | 2.2 | 2.2 | 2.0 | 2.3 |
| | M-F | +.1 | +.5△ | +.2 | +.1 | +.3 | +0 |
| Help to finance college education | M | 2.3 | 2.2 | 2.0 | 2.4 | 2.6 | 2.3 |
| | F | 2.1 | 2.0 | 2.0 | 2.3 | 2.3 | 2.4 |
| | M-F | +.2** | +.2 | -.0 | +.1 | +.3△ | -.1 |
| Apply your education to work | M | 2.2 | 2.6 | 2.4 | 2.2 | 2.1 | 2.2 |
| | F | 2.2 | 2.5 | 2.1 | 2.1 | 2.1 | 2.0 |
| | M-F | -0 | +.1 | +.3 | +.1 | +0 | +.2 |

ing to accept responsibility, feeling more independent, learning about their own strengths and weaknesses, exploring and testing their career choice, improving specific career skills, and learning about job opportunities. Students rated the work experience relatively least useful (but still more than "somewhat useful") for making contacts for future employment, helping to finance their education, and applying their education to work.

With respect to sex differences, while Table 23 shows a few significant differences, none very large and only two reached the 1% level of significance: Engineering women found their jobs less useful than did Engineering men for improving general work skills; and All men rated their jobs more useful, as compared with All women, in helping to finance their education. The ratings do, however, show consistent <u>patterns</u> of sex differences (if we ignore the very small group of FD men): Either the men in all the groups, or else the women in all the groups rated their jobs more useful for different particular purposes. The men found their co-op job to be more useful than did the women for: providing general work experience, learning about a specific career, improving general work skills (except men in Business), learning to accept responsibility (except MD men), testing their career choice (except Engineering men), improving specific career skills, learning about job opportunities (except NT men), making contacts for future employment, helping to finance their education, and applying their education to work. The women found the co-op job more useful for achieving the remaining four purposes: learning about the "real" world and how to work with others, feeling more independent, and learning about their own strengths and weaknesses.

Contrasting the purposes for which the men found their jobs more useful with those for women, the first thing that stands out is that men find co-op useful for very many more reasons (10 out of 14) than do women. Among the list of possibilities presented, only 4 were more characteristically female. Secondly, men and women seem to value co-op for two different, distinct types of

reasons. Males find co-op useful for reasons that are distinctly work-related, while for females the purposes that co-op achieves are much more personally and interpersonally-oriented. Thus it seems that the men find the co-op work experience valuable for a much greater variety of reasons than do the women, and for different kinds of reasons. The nature of the reasons suggest the hypothesis that young men entering their first adult work experience are more ready or better able than young women to orient themselves to the world of work, perhaps as a result of differences in sex roles which are ingrained in our society. In other words, these men may be at the point of deciding "which" among various work-related options, while the women may be deciding between work and other alternatives.

Factors influencing career choice. To assess the factors that affect a student's career choice, we presented a list of 11 possible options, with directions to write in others (of which we scored three). Each student was to select the three factors s/he considered most important, and to rank them from 1 to 3. From these rankings we derived, for both sexes within each partitioned group, a weighted importance score which has a possible range from 0 to 100.[1] Table 24 shows the results; the factors are listed in decreasing order of importance based on the scores of the Entire group. Because of the group-derived nature of the scores, no significance tests were performed. Our comments will, therefore, simply be descriptive and comparative, but many of the differences among the groups and items are quite clear without any statistical tests.

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[1]The weighted importance score was obtained as follows: For each group (e.g., NT men), the score equals 3 times the percentage of that group who ranked the item first in importance, plus 2 times the percentage ranking it second, plus 1 times the percentage ranking it third in importance. This sum was then divided by 3, yielding a score that can range from 0 to 100. Thus if every NT man ranked "high salary" as first in importance, the group score would be: (3 x 100%, + 2 x 0%) ÷ 3 = 100. The actual calculation on this item for NT men was: (3 x 8%, + 2 x 20%, + 1 x 6%) ÷ 3 = 23.3. The remaining NT men (66% of them) did not rank high salary among their first three choices.

TABLE 24

MOST IMPORTANT FACTORS IN MAKING A CAREER CHOICE:
WEIGHTED IMPORTANCE SCORE

| FACTORS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Use of own special skills & abilities | M | 30 | 11 | 48 | 28 | 34 | 22 |
| | F | 38 | 31 | 43 | 39 | 48 | 32 |
| | M-F | -8 | -20 | +5 | -11 | -14 | -10 |
| High salary | M | 32 | 18 | 23 | 34 | 34 | 34 |
| | F | 19 | 16 | 12 | 23 | 17 | 33 |
| | M-F | +13 | +2 | +11 | +11 | +17 | +1 |
| Steady secure work for the future | M | 30 | 22 | 14 | 33 | 32 | 30 |
| | F | 18 | 18 | 10 | 22 | 28 | 27 |
| | M-F | +12 | +4 | +4 | +11 | +4 | +3 |
| Opportunity for advancement | M | 23 | 22 | 14 | 24 | 24 | 33 |
| | F | 16 | 9 | 9 | 24 | 24 | 29 |
| | M-F | +7 | +13 | +5 | -0 | +0 | +4 |
| Pleasant working conditions | M | 20 | 18 | 12 | 20 | 20 | 20 |
| | F | 19 | 12 | 19 | 22 | 10 | 20 |
| | M-F | +1 | +6 | -7 | -2 | +10 | -0 |
| Opportunity to help others | M | 10 | 29 | 33 | 6 | 3 | 8 |
| | F | 28 | 61 | 28 | 9 | 8 | 5 |
| | M-F | -18 | -32 | +5 | -3 | -5 | +3 |
| Opportunity to work with people | M | 9 | 48 | 7 | 8 | 5 | 14 |
| | F | 19 | 25 | 14 | 17 | 14 | 21 |
| | M-F | -10 | +23 | -7 | -9 | -9 | -7 |
| Opportunity to contribute to society | M | 11 | 11 | 16 | 10 | 11 | 8 |
| | F | 15 | 9 | 27 | 13 | 17 | 6 |
| | M-F | -4 | +2 | -11 | -3 | -6 | +2 |
| Permits use of creativity | M | 12 | 0 | 17 | 12 | 15 | 5 |
| | F | 12 | 7 | 17 | 11 | 18 | 9 |
| | M-F | +0 | -7 | -0 | +1 | -3 | -4 |
| High prestige or status | M | 6 | 0 | 2 | 6 | 4 | 9 |
| | F | 4 | 2 | 2 | 5 | 1 | 8 |
| | M-F | +2 | -2 | 0 | +1 | +3 | +1 |
| Freedom from supervision | M | 4 | 7 | 6 | 3 | 3 | 2 |
| | F | 5 | 5 | 7 | 5 | 0 | 6 |
| | M-F | -1 | +2 | -1 | -2 | +3 | -4 |
| Other-Enjoyable | M | 4 | 11 | 3 | 4 | 6 | 2 |
| | F | 4 | 3 | 2 | 4 | 8 | 5 |
| | M-F | -0 | +8 | +1 | 0 | -2 | -3 |
| Other-Challenging, interesting | M | 2 | 0 | 3 | 2 | 3 | 0 |
| | F | 1 | 0 | 0 | 3 | 4 | 0 |
| | M-F | +1 | 0 | +3 | -1 | -1 | 0 |
| Specified Other | M | 4 | 0 | 3 | 4 | 4 | 3 |
| | F | 1 | 0 | 1 | 1 | 3 | 0 |
| | M-F | +3 | 0 | +2 | +3 | +1 | +3 |

First, an overview of the magnitude of these scores shows that on no item (factor) did any group even approach 100. The highest score by far was 61, and the next four other highest scores (out of a total of 168--14 factors x 6 groups x 2 sexes) were in the 40's. Thus the effective range of the group scores is 0 to 61, and a score above 40 indicates a factor that is very important to a group of students. With these points in mind, we will comment on each item, and after that on patterns of sex differences in the importance attributed to the items.

For the Entire group, the most important factor in choosing a career is whether it permits the use of one's own special skills and abilities (Entire group score, 33). From other research we know that this is a very common reason among students and it is especially true of these Engineering women (48) and the NT students (M 48, F 43), but much less true of the men in Business (22). The next two items in Table 24, high salary and steady, secure work for the future, are about equal in importance for the Entire group (scores 26 and 25, respectively). A high salary is an important consideration in choosing a career to most of the male groups (All, 32; MD, Engineering, and Business, 34); but, relative to the other men, the NT men attach low importance to salary considerations (23). A high salary matters least to the NT women (12), and not much more to the FD students (M 18, F 16) or the Engineering women (17). In terms of desiring steady, secure future work, the NT group again stands out as different from the others, attaching relatively little importance to this factor (M 14, F 10); MD men (33) and Engineering men (32) value security more than the other groups. Among the women's groups, those in Engineering (28) and Business (27) attach the most importance to the security of their future career.

The next lesser important group of items (with scores for the Entire group presented in parentheses) includes opportunity for advancement (20), pleasant surroundings and working conditions (19), and opportunity to help others (18). Opportunity for advancement is most important to the Business students (M 33, F 29); this factor

is least important to the FD women (9) and to NT students (M 14, F 9). With respect to a pleasant working environment, the groups are quite similar, except for the relatively low weights assigned by the Engineering women (10) and the FD women and NT men (12).[1] Scores for the importance placed on the opportunity to help others as a factor in career choice show more divergence among the groups than any other factor. Here we find the highest score in the table: the career choices of FD women are strongly influenced by a desire to help others (61), as are those of FD men (29) and NT men (33). But this factor matters very little to students in the MD (M 6, F 9), Engineering (M 3, F 8), and Business (M 8, F 5) groups.

The next set of items includes opportunity to work with people (13), to contribute to society (13), and to use creativity (12). For FD students, the chance to work with people ranks nearly as high in importance (M 48, F 25) as the opportunity to help others; this is as expected--the female-dominated careers are the "helping occupations." Working with people also ranks relatively high for students in Business (M 14, F 21)--but since "helping others" did not rank so high for them, it seems likely that "working with people" means different things to the Business than to the FD students. Overall, few students attached primary importance to an opportunity to contribute to society, but they more often ranked it second or third in importance. Contributing to society mattered most to the NT students (M 16, F 27), and to the Engineering women (17). Whether or not a career allows for the use of creativity mattered most to the Engineering women (18) and the NT students (M and F, 17) and was quite unimportant to the Business students (M 5, F 9) and the FD students (M 0, F 7).

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[1] Table C4 in the Appendix shows, by groups, the percentage of students who ranked each item first in importance. No Engineering woman ranked pleasant working conditions as first in importance.

The remaining factors (see Table 24) were of very little importance for anyone--except that Business students had a little more desire for high prestige or status (M 9, F 8) than the other groups; in contrast, none of the NT students, FD students, or Engineering women gave first-rank importance to high status in making a career choice. (Appendix, Table C4).

The descriptive comments on the importance scores have already stated or implied some of the sex differences. Now we can look at patterns and magnitudes of sex differences. There are four factors which are generally considered more important by the men than by the women: high salary, steady and secure future work, opportunity for advancement, and high prestige or status. The factors the women generally consider more important include the opportunity to use their own special abilities, to help others, to work with people, to contribute to society, and to be free from supervision. These differences seem to relate to some common sex stereotypes. For example, taken together, the factors that matter most to the male students reflect the traditional view of a man's work role as being the steady breadwinner who aims for advancement. Women, on the other hand, attach greater value to personal relations, helping people, and making a contribution to society which accords with their own abilities. Thus the predominant factors affecting the women's career choices reflect the characteristics of the "helping" occupations, which are really extensions of the traditional female role in the home. To summarize, it appears that many students of both sexes have adopted some prevailing stereotypical values about male and female roles, and that these do indeed have a definite influence on their career choices.

There are some notable deviations from the general patterns, and these exceptions are of great interest to us. First, consider the women and the men majoring in Business. Women in Business care just as much as the men about getting a high salary. They are <u>less</u> concerned than their male counterparts with contributing

to society, and (along with the NT women) with helping others. Other exceptions to the general patterns involve the MD women and the subset, women in Engineering. Opportunity for advancement is as important to these women as it is to the corresponding men; but the Engineering women differ from the total group of MD women in that their desire for advancement is not strongly coupled with a desire for a high salary. The Engineering women, in contrast to the other women's groups, also attach less importance to freedom from supervision as a factor in choosing a career.[1]

First-choice career. The Questionnaire asked students to state specifically what career they would most want after completing all schooling. Their responses were quite specific, and therefore much more amenable to coding and categorizing than stated job titles were. We prepared a table of results (comparable to Table 3--that was the table showing the primary business of the co-op employer for students in each analytic group) tallying the responses for male and female students into the same employer groupings by 15 categories of first-choice career. No table will be presented here because it is so large and cumbrous, but the results merit a few comments.

First a word about the 15 career categories: as examples, careers were classified under such headings as engineering, business and finance, education, health and social services, law, communications, and so on. The outcomes were similar to those for Table 3. Just as that table showed a fairly close relation between the employer's business and the students' majors (as they were grouped for analysis), here, too, the data suggests a close relation between the employer's business and the students' first-choice career.

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[1]Another way of making similar comparisons is to examine the groups one at a time, placing their 14 importance scores in rank order. These ranks, shown in Table C5 in the Appendix, can then be compared across groups.

This method of ranking scores within groups illustrates a procedure that is applicable to many other tables throughout this report.

Most of the would-be engineers, for example, worked for a manufacturer, engineering firm, research organization, or a power-processor. Most would-be educators worked for an educational institution. Most students who wanted a career in business or finance worked for a financial or accounting firm, a manufacturer, or occasionally a retail store. The majority of students interested in systems and computers worked either for a computer organization or a manufacturer. The great majority of the students interested in health- and social service-related careers had an employer whose business was in that field. (These results lend further support to our conclusion that the students' career interests and the kind of co-op job they had are related--although not perfectly.)

After stating their first-choice career, students were asked to rate (on a 4-point scale) how likely it is that they will enter that career, and how likely it is that they will continue to work in it or in any other job twenty years hence.[1] Students in every group felt it was quite likely that they would enter their first-choice career; the means clustered between 3.5 and 3.7. Sex differences were small, but the women were slightly more optimistic than the men. In the Engineering group the male-female difference tended toward significance (10% level); that is, the Engineering women feel surer than the men that they will enter and work in this field. Of all the groups, Engineering women and the FD students were the most certain about entering their chosen career.

Consider next the question of whether, 20 years from now, the students thought they would be working full time at any job. Here the means ranged from 3.2, for FD women, to 3.8, for MD men (or 3.9 for FD men). The men were much more certain than the women

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[1]The scale was as follows: 1 = no chance, 2 = not very likely, 3 = somewhat likely, and 4 = very likely.

that they would be working; the means were significantly higher (1% level) for All men, MD men, and FD men. Comparing these responses with those to the previous question, the men generally felt more certain that they would be working 20 years from now than about whether they would actually enter their first-choice career. For women this comparison yields an opposite result; they have less expectation of working full time 20 years hence than of entering their chosen career after they complete their education. These results indicate that in general the students are optimistic about entering and beginning to work in the career of their choice. They are much less certain about what the fairly distant future holds in store for them.

This concludes the results section. Although detailed and somewhat complicated--both for the reader and for the authors--what we have presented amounts to only a small portion of the data we have. Again, the interested reader is invited to examine the analyses available in our offices. The data we presented was a fair representation of all the kinds of information we collected, the types of analyses that were undertaken, and the nature of the major findings. Many other comparisons can be made from these data--some of which we have recommended in the text.

While we have confidence in the results, the reader is cautioned that the size of some groups (particularly the group of FD men) makes some findings unreliable, and that some of the statistically significant differences obtained could result from chance. Nevertheless, the consistency of patterns and trends is clear and suggests strongly that the outcomes have validity. We also believe the results to be generalizable, given the varied nature of the programs and institutions from which the sample was drawn.

Throughout this section we have made or implied certain interpretations, and have advanced alternative explanations. Readers who are more familiar with the operation of co-op programs may be able to offer other, equally convincing ones; we urge you to do so and to share these with us.

## SUMMARY AND CONCLUSIONS

With a grant from the U. S. Office of Education, Cooperative Education Branch, in 1978-79 we investigated sex differences among college students on their first cooperative education (co-op) work placement. This study represents an expansion of a smaller study we conducted in 1977-78, in which we looked at male and female differences in the work activities of co-op students. The current research examines differences between female and male students as they occurred on the co-op job in relation to the traditional or nontraditional nature of their majors and career interests. The information we collected describes the students' working conditions, what they do during a typical day, whether they consider their work activities appropriate, how competent they feel in performing them, and their perceptions of the work experience and of themselves as workers. Ratings by the students' employers (immediate supervisors) were compared with the students' self-ratings.

There were 47 participating four-year colleges and a total of 742 different students. Data was obtained from three instruments: On the Log (N = 710) the students' ratings gave a picture of a typical work day--where time was spent, with whom, and at what tasks or activities. The Questionnaire (N = 539) asked for students' views about the work situation, their relations with co-workers and supervisors, abilities, degree of compliance with organizational policies, and for information about how the co-op experience and other factors affected their career choice. Supervisors (N = 427) described whether the student performed the listed activities, and if so how well, as compared with the average (non-co-op) worker. The supervisor also rated the student on a list of personal qualities and then assessed the pertinence of each quality to the job.

The primary research question concerned sex differences, especially within career areas that are traditionally dominated by one sex or the other; that is, the issue was one of whether the

work experience of, for example, male and female co-op engineering students differs. To answer this question, students had to be grouped for data analysis on some basis other than job titles, which were too vague to be useful. Internal evidence indicated that jobs and majors were quite closely related, so the students were divided into three groups according to the traditionality of their college majors: female-dominated or FD (majors in which men account for 28% or less of national college enrollment); neutral or NT (majors in which 29 to 84% of college students are male); and male-dominated or MD (majors in which enrollment is 85% or more male). Part of the MD group was formed into two separate groups--namely, students majoring in Engineering and in Business. Thus we compared All men with All women, and also studied sex differences within these five analytic groups.

In the total sample, male-dominated majors predominate (71% MD, 16% NT, and 13% FD); about half the MD students majored in Engineering and 30 percent in Business. Approximately these same proportions hold on all three instruments. As expected, in the FD group there were very few men; the NT group contained slightly more women than men; and the MD group was about two-thirds male. About four-fifths of the Engineering group and two-thirds of the Business group were male.

On all three instruments the ratio of All male to All female students was 57:43--about the same as in the national college population. Moreover, the ratio of men to women within each analytic group was approximately the same on the three instruments. From this and other evidence, the three student samples are considered equivalent.

In generalizing about the results, in this report we have focused on exceptional or deviant group scores, even though on many items the men and women did not differ either within or between groups. The significant exceptions that are discussed help to define differences among the analytic groups as they may

be related to the traditionality variable and to sex differences. The exceptions seemed to characterize (that is, to occur most frequently among) the Engineering women and women in Business--involving the two clusters of majors that enroll the fewest women and are thus the most heavily male-dominated. The NT group, and especially the NT men, also sometimes deviated from the general patterns of response.

In this concluding section, we present a picture of female and male first-time co-ops irrespective of major, of women in career areas nontraditional for females (MD, Engineering, and Business), and of men in career fields nontraditional for males (FD), as contrasted with the male and female students who dominate these respective fields. Unfortunately, there are too few men in the FD majors, both in the sample and in the national college co-op population, to permit as complete an analysis as is possible for the MD group and its components.

What follows is a liberal interpretation of the outcomes of this study. The reader is cautioned that the generalizations, although supported by the detailed results, are deliberately stated broadly in the interests of stimulating further research and further consideration of programmatic action in cooperative education. Reading of the complete results is strongly advised.

- The male and female students who elect a cooperative education differ in certain characteristics other than those pertaining to their co-op jobs.

In this large national sample, the women entered their first co-op job earlier in their academic careers than the men, and, based on self-reported grade point averages, were slightly better students than the men.

Surprisingly few co-op students of either sex were undecided about their future, in terms of both their career plans and the level of education they anticipate attaining. More than two-thirds of all the students plan to continue their education beyond the

baccalaureate degree. These findings suggest either that co-op is a stabilizing influence or that it attracts a fairly stable population, with relatively high aspirations. Stability as a factor is also supported by the finding that the percentage of students who had changed their major is small. However, among the upper-class students (juniors and seniors), more women than men had changed major. This fact, in turn, suggests that females and males seek different things from, or find different values in, co-op--suppositions which are borne out by some other findings.

Very few students reported major academic or personal problems in the 7 areas queried. Finances presented the most serious problems to both men and women; next in severity was the area of grades and study habits, where more men had serious problems. Men found co-op more useful than women for helping with finances, raising the question of whether they have greater financial need or whether they earn higher salaries. Women, especially those in nontraditional fields, reported more personal problems than men. Whether this difference is real or reflects women's greater ease in discussing personal problems is indeterminant from the data, and research by others supports both interpretations.

- Women and men students value co-op highly but for different reasons; we do not know whether this results from different expectations, different job experiences, or different perceptions.

Students' ratings of the usefulness of their co-op job with respect to 14 purposes showed generally high ratings. Patterns of sex differences were very consistent across all analytic groups: The men in most groups found their jobs useful for a much greater variety of reasons than the women (10 vs. 4). The types of reasons chosen by the men and women were quite different, paralleling factors affecting career choices. The purposes valued by men were clearly and directly work-related, while women's choices were based on personal and interpersonal reasons. These differences suggest

that as first-time co-ops young men are better oriented than the women to the values that prevail in the adult working environment.

- For the co-op students in the sample, career choice is related to sex and curriculum.

In rating factors that were important to them in making a career choice, male and female students clearly differed, and to some extent along sex-stereotyped lines. The factors that were generally important to the men reflect their view of the male work role as steady, sustaining (of the worker's dependents), and advancing over time. The women, and especially the women in traditional fields, view their work role in a much more personal way, and as satisfying helping, nurturing functions toward other people and society.

The main exceptions to these generalizations occur among the women majoring in Business and Engineering, the traditionally male fields. These women seem different from other women, and indeed they must be so to choose a nontraditional career. Similar to the findings on several other measures, the women in Business were in some ways much more like the men in the sample with respect to factors involved in their choice of career. The women in Engineering, while they selected a different pattern of factors as important to their career choice than the women in Business, were in some ways also very similar to their male Engineering counterparts.

The students in general considered it very likely that they would enter their first-choice career--especially the Engineering women and the students (of both sexes) who were majoring in areas in which women predominate. Looking 20 years hence, men were much more certain than women that they would be working at some job. Whether this would be in their present first-choice career, all students were less certain.

- For their initial co-op work assignment, these college and university students are generally placed in jobs they find suitable and satisfying.

Most students found their co-op job relevant to their major and to their future career plans. In every group, this was somewhat more true for men than for women. Ratings of the closeness of match between the actual co-op job and the desired job were also high, and more so for men, especially for men in the most traditionally male majors (Engineering and Business). The match was less close for women in fields nontraditional for their sex (Engineering in particular).

Student ratings of whether the work tasks they performed were appropriate to their job indicated that if students performed an activity, then they usually considered it appropriate; and the more time they worked at an activity, the more likely they were to view it as appropriate. They considered the more complex tasks slightly more appropriate than the more routine ones. Few sex differences were significant in any group.

Most students' jobs met their expectations (but least so for Engineering men), and particularly helped Engineering women and Business men to clarify their future plans. Most students enjoyed their co-op job very much; men found the experience slightly more enjoyable than women, except that Engineering women enjoyed their job as much as their male counterparts, even though it did not match their desires very closely.

- The work environment and working conditions of male and female co-op students differ in many parameters.

Proportionately more women worked for nonprofit agencies, while more of the men worked for private organizations. Possible salary differences (which were not studied) might be a consequence of this fact.

Women and men generally worked a 5-day week, Monday to Friday. Overtime and weekend work were rare, but on an average day men worked longer hours and more overtime, while more of the women worked on weekend days. Pay for overtime was much more common for men, except in Business, where the women were more often paid.

Most students felt they had an appreciable amount of independence, and a little more authority and responsibility than comparable co-workers; this was more true of the women, and particularly Engineering women.

Male co-ops received new instructions or assignments more often than females and had their work reviewed more frequently, suggesting either that they were more in need of supervision or--as is likely--that the more varied nature of their work tasks entailed more instruction and review. This finding may also be due to the presence of a large proportion of male supervisors, who might feel more comfortable instructing and interacting with students of their own sex.

It is understandable that the students, as new employees, had somewhat less equipment and work space than their co-workers. But, viewing the men and women separately in relation to co-workers, there was the same degree of disadvantage between male students and their co-workers as between female students and their co-workers. Generally, neither the male nor the female co-ops received any special favoritism in terms of equipment; however, in most groups and on most items queried, the men had a slight advantage over the women, with the notable exception of the Engineering group. Proportionately more of the Engineering women co-ops had their own desk than was true in any other group, and they had a slight advantage over the Engineering men on some other items of equipment. This result may reflect differential treatment of these women by their supervisor, since the female Engineering co-op may be the only woman--or one of very few women--present.

- o The events and encounters of the typical work day differ for male and female co-ops.

The fact that men more often than women found their co-op work challenging, instructive, and beyond their abilities may be related to the finding that the first co-op work assignment was more varied for men than for women.

In overall perspective, proportionately more of the men in most groups reported being in many of the different locations, interacting with many different categories of workers, and performing more of the listed activities or tasks. Thus men seem to move around more during the day, see more people, and do more things. However, when we examine the amount of time spent by students who engaged in each of these things, it becomes obvious that, task by task and person by person, women co-ops averaged more time--suggesting that for women the co-op experience has greater depth.

Specifically, All men and All women differed significantly in the following ways:

In terms of locations and persons, more of the men spent some work time at their own work station, in a duplicating room, another private office, a computer/keypunch room, lab, and assembly line. But on only one item did the amount of time men spent exceed that for women: they spent more time with delivery or repair people. More of the women worked in a restaurant area, reception area, classroom, patient's hospital room, and with clients (which also includes patients, customers, and students), and friends or family not employed at the company. The women spent more time than the men walking, traveling to other destinations, in a restaurant area, supply room, meeting room, classroom, and patient's hospital room; and with workers of all levels in their own department, and clients (probably mainly patients).

In terms of activities, the students engaged in varied tasks, requiring mainly middle-level functions, but also, and to only a slightly lesser extent, both more routine and more complex tasks.

In general, the more common activities for men included the following: fill out forms/keep records, duplicate/Xerox, tabulate data, keypunch/verify, develop ideas, operate a computer, repair equipment, analyze data, and design instruments/techniques. On only one activity did they spend more work time than the women: repairing equipment (but no one spent very much time at this task). The activities that were more usual for the women include the following: stamp/staple/paste, feed patients (or animals), type, deal with clients, instruct/tutor and supervise clients, and get lunch/coffee for supervisors. The women spent more time than the men at the following: fill out forms/keep records, answer phones/take messages, duplicate/Xerox, clean equipment or animals, attend meetings, make decisions, develop ideas, order supplies/take inventory, deal with clients, instruct/tutor and supervise clients, receive instructions, and take meal breaks.

Students' self-ratings of ability to perform the listed work tasks showed generally high self-confidence about their own abilities; they gave the highest average ratings to the least complex tasks, and somewhat lower ratings to tasks involving more judgment and responsibility. Differences between ability ratings by the men and women in the separate groups easily lend themselves to interpretation in terms of sex stereotypes in the students' attitudes toward work tasks; these are revealed by the marked consistencies in the direction (although not necessarily the significance) of differences across groups on nearly every task. The most prominent examples are that the men in every group felt more competent to lift or carry things, make security checks, and repair equipment; the comparable tasks for women are typing and proofreading. As with many of the other measures used in this study, the exceptions to conformance with the predominant sex pattern on particular items occurred mainly in the Business, Engineering, and Neutral groups. There was no general tendency for women to rate themselves lower than men, as was the case with the smaller 1977-78 sample; thus self-rated ability here seems much more task-related than sex-related.

- The kind and amount of personal and social interaction that occurred at work is a function of sex and curriculum.

Some socializing with co-workers and supervisors took place during the day at work, but relatively rarely after work. Being included in social activities with co-workers at work was more common for women, except in the Business group, where the men scored higher. Men more often reported being asked to do favors for co-workers and supervisors, and they did more personal errands during the day. Women, on the other hand, were more likely than the men (except those in Business) to get lunch or coffee for co-workers and supervisors.

In terms of where socializing took place (i.e., the locations), more of the men spent rest or social time at their own work station and in their supervisor's office, and in a computer room. Women, in comparison, tended to leave their work area for some of their rest or social time, spending such time in an employee lounge, patient's hospital room, and with clients, and friends or family not employed at their company.

In terms of the persons with whom students spent rest breaks or socialized, it was somewhat more common for men than for women to spend such time with supervisors and higher-level workers, but there were exceptions: More FD women and Business men spent social time with their immediate supervisor than did any other group; and in fact Business men spent proportionately more time than any other group socializing with many categories of workers at all levels. Large proportions of the women in Engineering spent social time with workers of all levels in <u>other</u> departments than their own; perhaps their aim was to find some female companionship at work. As for the FD women, they had the largest proportion of female supervisors, so it is reasonable that they would spend both work and social time together. The men in Business, because of the extensive amount and varied nature of their socializing (as well as other evidence), show many resemblances to the stereotypical

budding young executive; however, the women in Business are in many ways very similar to these men, but their socializing is not as pronounced. The Business men, although they seem like incipient executives, got lunch or coffee for both co-workers and supervisors more often than did the women. These latter actions could be interpreted as non-chauvinistic, or as attempts to carry favors; the simpler explanation may be that their supervisors (predominantly male) found it easier to ask the men to do these things.

Women co-ops more often reported receiving encouragement from their supervisors to ask for advice about school (especially the MD and Engineering women) and to talk about personal problems especially women in Business). Both the Engineering and Business women felt much encouragement to ask questions about work; questions about future employment in the company were especially welcomed from Engineering women. These findings lend confirmation to the impression that many employers are seeking to increase the number of women in nontraditional careers. Men reported receiving slightly more encouragement than women to offer opinions and suggestions, a finding that fits with other evidence, such as their greater self-confidence.

- There are indications that some sex-stereotyped attitudes and perceptions are beginning to change, and other indications that they continue to be subtly pervasive.

Many more women are moving into fields that have been traditionally male-dominated than there are men entering areas that have been the purview of women. Within broad curricular areas, however, there are still specific majors that are dominated by one sex. As illustrations, there are no male nurses in this national sample; and within Engineering, which contains 16 specific majors, the women tend to elect chemical, civil, and electrical engineering rather than other branches.

The distribution of supervisors by sex approximated that prevailing generally; three-fourths of the supervisors were male.

The most likely area in which to find female supervisors is the female-dominated occupations. Students' preferences as to sex of supervisor reflect these prevailing proportions. Most students would prefer a supervisor of the same sex as their actual co-op supervisor; therefore, preferences for a male supervisor predominated in the total sample and among men, while the women's preferences were more evenly balanced between male and female supervisors. This latter fact probably reflects the women's greater exposure to female supervisors, rather than more liberal or more broadly accepting attitudes on the women's part.

Although supervisors rated co-op students highly--above the level of the typical regular employee in the same job, women students were considered somewhat better workers than the men, both in carrying out specific tasks and in terms of personal qualities. The women were judged to be neater, more efficient, verbal, intuitive, able to advance rapidly, to work well both alone and with others, more sociable, emotional, sensitive, generous, patient, considerate, gentle, sympathetic, tactful, artistic, attractive, and fashionable. The men were judged to be more self-confident, competitive, and aggressive. Many of these qualities are sex-stereotyped, but many are also relevant to productive work.

Despite the fact that female and male students do different things during a typical day at work, they rarely rate their work activities as being inappropriate to their sex. Some tasks, however, were perceived as less appropriate than others by either one sex or the other. As examples, women co-ops did not consider it particularly appropriate for them to repair equipment, operate a computer, make decisions, and duplicate or Xerox. With respect to lifting and carrying--a stereotypically male activity--more of the men reported doing this task and felt more competent at it than the corresponding women; however, the supervisors' ratings favored the women, and the women (except those in the NT group) spent more time lifting and carrying.

- Whether the men and women in groups at the extremes of the traditionality continuum differ from each other and from others of their own sex depends in part on whether they are or are not members of the dominant sex in their group.

The extremes of the traditionality continuum are represented by the male-dominated Engineering and Business groups, and at the other end by the female-dominated (FD) group. The data already presented has shown some wide disparities between students, whether male or female, who are in male-dominated and in female-dominated fields. Also, many examples have been cited of clear differences, as well as some similarities, between Engineering men and women, Business men and women, and (to a lesser extent) FD men and women.

It appears that students who have chosen to major in fields where their sex is opposite to that of the dominant group--and particularly Engineering and Business--resemble in many ways the members of that dominant group, rather than others of their own sex. Examples can be found throughout the report in superabundance; they occur in nearly every set of data presented. To begin with an example from the beginning of the report: Grades and study habits, overall a somewhat more serious problem for men, was on the average rated most serious by the Engineering women; in contrast, FD men rated this problem area low--more like the women's groups. In general, women's groups viewed their work as inappropriate to their sex slightly more often than the corresponding men, but Business women did <u>not</u> do this; although their mean was like that of all the other women's groups, it was the men in Business who deviated from others of both their own and the opposite sex in that they, more often than any other group, considered their work inappropriate to their sex. Having work tasks at too low a level for the job revealed an opposite picture for the Business group: Business women (along with NT women) considered this quality more characteristic of their jobs than did any other male or female groups, while Business men's views were like those of other men.

Such examples could be multiplied ad infinitum, but there seems little point in doing so, and many of them have been referred to or implied earlier in this summary. We conclude that Engineering women, motivated by their strong desire to be engineers, resemble their male counterparts in many work-related respects, but still retain some aspects of a "feminine," personalized approach to problems and events. Business women are somewhat different; they outdo their male counterparts, and sometimes other men as well, in possessing or striving for a "masculine" approach. They may achieve this by such things as an unwillingness to participate in stereotypically female tasks--such as getting lunch or coffee for co-workers and supervisors. But at least in their patterns of personal interaction with other workers, the Business women need to modify their approach before their behavior will match that of the Business men.

- As workers, co-op students are at least as good as, and in many ways better than, average non-co-op workers in comparable jobs, with the women's performance being judged superior to that of the men.

The students felt they complied better with work rules than their co-workers, and the women rated themselves as more compliant than the men. Women, and especially FD women, considered their supervisors less tolerant of infractions than did the men; but in fact the supervisors spoke to more of the men in every group (even though this applied to few of them) about noncompliance. The women's greater compliance may stem from their perception of their supervisor as somewhat less tolerant,with their own consequent behavior influenced by a desire to avoid criticism. According to the supervisors, however, the students' compliance (of both men and women) was much superior to that of the average comparable worker.

Supervisors judged co-ops as better than the average worker in many other ways as well. As a matter of fact, co-ops are rated

very much higher in ability to perform various tasks than the typical employee,with women co-ops generally considered more able than men.

On a list of 40 personal qualities, students rated themselves and their supervisor's opinion of them; supervisors also rated the students. On every quality these three mean ratings are remarkably consistent, and very favorable to the students. Student ratings of their supervisor's opinion of them are lower than their self-ratings--too low, since supervisors agreed with the students' higher self-assessments. The differences between men and women fit many of the usual sex stereotypes about qualities regarded as masculine and feminine; however, of the listed qualities, far more were rated as typically female than male. This finding suggests that at the present time stereotypes about personal characteristics which are generally regarded as male may be decreasing much more quickly than for those regarded as female. It also may be that "female" qualities are more related to efficient, productive work at the level of these jobs.

In another set of ratings by students and supervisors of personal characteristics, the students showed awareness of the qualities that are important to an employer. Apart from under-estimating their supervisor's opinion of them, these students, on their first co-op job, seem to have an accurate appraisal of themselves and the work situation.

- There is considerable evidence that first-time co-op students have a fairly realistic appraisal of themselves and the world of work, although some of the evidence contradicts this view.

First of all, in reporting work tasks performed, students and supervisors agree; that is, in group terms, the proportion of students who said they did <u>not</u> perform a particular activity at all agreed with the similar proportion reported by supervisors. Next, in rating ability to perform tasks, students and supervisors

were in general agreement; the co-ops' work performance was better than that of comparable non-co-op workers. Third, ratings of personal qualities by students and by supervisors were very consistent; the students also showed comprehension of the qualities that are important to an employer.

By the students' own reports and by those of supervisors, the students complied very well with company rules and policies. Students, in rating their perception of their supervisor's degree of tolerance of possible infractions, showed a realistic order of priorities as to areas in which noncompliance would be regarded by usual adult work supervisors as relatively serious or minor.

As a contradiction to this picture, the work task in which students most commonly said they engaged was "making decisions"--four-fifths of both the men and women reported this as a typical activity. For this result and perhaps some others in the same vein, the fault may be ours in not providing much more specific definitions.

- An initial co-op assignment is crucial in that it establishes and reinforces behavior patterns and attitudes toward work, which students may carry into their post-college careers.

Some of the data strongly suggests that what students experience in an initial co-op job can determine subsequent attitudes toward work. That the experience is important to the students can be seen by the overwhelming percentage who said it met their expectations and helped them with their plans for the future. On a first co-op job, students generally spent considerable time at their own desk or work station; their time was about equally divided between working alone and working with others. In terms of the level of tasks in which they engaged, it would be a misconception to view the first co-op job as very low in level, since the students spend time on and do many things besides simply routine tasks. Some of their assigned

tasks may be fairly complex, such as writing reports, dealing with clients, or operating a computer.

It appears that first-time co-op students very quickly equate performance of a task with its appropriateness to their job. They begin to develop styles and preferences based on familiarity with situations, persons, and tasks--that is, with what they have been exposed to. Three examples from the data illustrate these points. First, as we saw, there is a consistent positive relation between the amount of time a student spends on an activity and the likelihood that it will be rated appropriate for one of their sex and at their level. Second, although preferring a male supervisor overall, students tended to prefer a supervisor of the same sex as their actual co-op supervisor. Third, there is a direct relationship between familiarity with a task (familiarity that results from exposure) and feelings of competence about performing it well.

If indeed these phenomena are valid, the first adult work experience assumes important meaning. Cooperative education programs can build in experiences that complement the strengths and weaknesses of individual students and can provide planned systematic events that assure the student of a comprehensive, realistic picture of the working world.

# APPENDIX A

## PARTICIPATING COLLEGES AND UNIVERSITIES

| | |
|---|---|
| Akron, University of | D.R. Burrowbridge, Director<br>Cooperative Education Program |
| Alabama, the University of | Paul McMahan, Interim Director<br>Cooperative Education Program |
| Albany State College (Georgia) | Mary J. Follings, Director<br>Cooperative Education Program |
| American University, The | Tobie Van Der Vorm, Director<br>Cooperative Education Program |
| Antioch College | Dan Hotaling, Chairman<br>Center for Cooperative Education |
| Brigham Young University | Lane A. Compton, Director<br>Cooperative Education Program |
| California State University, Dominguez Hills | Dr. Jack T. Belasco, Director<br>Experiential Education |
| California State University, Fullerton | Laura Ramirez Matz, Associate Director<br>Center for Internships and Cooperative Education |
| Cincinnati, University of | E. Sam Sovilla, Director/Assoc. Dean<br>Brenda J. LeMaster, Asst. Professor<br>Professional Practice Division |
| Cleveland State University | Dr. Joseph W. Cole, Director<br>Career Services Center<br>Cooperative Education Program |
| Detroit Institute of Technology | Cheryl Termaat, Coordinator<br>Cooperative Education and Career Placement |
| Detroit, University of | Donald C. Hunt, Director<br>Ruth Barna, Coordinator<br>Career Planning, Cooperative Education, and Placement |
| Drexel University | Stewart B. Collins, Director<br>Department of Cooperative Education |
| East Tennessee State University | Dr. James B. Osborne<br>Cooperative Education Program |
| Gustavus Adolphus College | Mark H. Anderson, Director<br>Cooperative Education Program |
| Houston, University of | J.E. Cox, Director<br>E.J. Lanik, Coordinator<br>Engineering Practice Programs |
| Illinois Institute of Technology | Donna Plumb, Coordinator<br>Cooperative Education Program |
| Illinois State University | Dr. Marlyn Lawrentz<br>University Professional Practice Coordinator |
| Indiana State University | E.R. Pettebone, Director<br>Denise M. Cummings, Coordinator<br>Cooperative Professional Practice Programs |

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|---|---|
| Indiana University, South Bend | Kitty Arnold, Director<br>Career and Placement Services |
| Insurance, College of | Dr. Theodore Kole, Director<br>Cooperative Education Program |
| Iowa State University | Herb Harmison, Jr., Director<br>Placement Office |
| Kalamazoo College | Warren I. Thomas, Director<br>Career Development Center |
| LeMoyne-Owen College | Cedric I. Rice, Director<br>Shirley Hill, Asst. Director/Counseling<br>Career Service Center |
| Louisville, University of | Joseph H. Pierce, Director<br>Office of Cooperative Education and Placement |
| Marquette University | Dr. John P. Bradish, Assistant Dean<br>College of Engineering |
| Maryland, University of | Dr. D.J. Blair, Director<br>Cooperative Education Program |
| Medgar Evers College | Prof. Florence Kaplan, Acting Director<br>Cooperative Education Program |
| Merrimack College | Mary Lee Underhill, Director<br>Cooperative Education Program |
| Morehead State University | Wayne A. Morella, Director<br>Office of Field Career Experience |
| Nebraska, University of Lincoln | Dr. A.H. Witte<br>Department of Electrical Engineering |
| New Mexico State University | Dr. Maurice E. Hamilton, Director<br>Cooperative Education Program |
| North Carolina Agricultural & Technological State University | Harold L. Lanier, Director<br>Cooperative Education Program |
| North Carolina State University | John V. Hamme, Director<br>Robert M. Turner, Asst. Director<br>Cooperative Engineering and PAMS Education |
| Northeastern University | Paul M. Pratt, Dean<br>Richard E. Sprague, Asst. Dean<br>Cooperative Education Program |
| Ohio State University | Tom L. Smock<br>Cooperative Education Program |
| Purdue University | G.W. Bergren, Coordinator<br>J.E. Little, Assoc. Coordinator<br>Cooperative Education Program |
| Rutgers University | Dr. Maurice P. Hartley, Director<br>Cooperative Education Program |

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|---|---|
| Saginaw Valley State College | Gene Hamilton, Director<br>Cooperative Education Program<br>Division of Placement and Continuing Education Services |
| South Alabama, University of | E.R. Cimino, Director<br>Peggy Alums, Parallel Co-op. Coordinator<br>Cooperative Education & Placement Office |
| Tennessee Technological University | William G. Patterson, Director<br>Lawrence W. Hester, Coordinator<br>Cooperative Education Program |
| Tennessee, University of | Elizabeth M. Corlew, Coordinator<br>Cooperative Engineering Program |
| Virginia Polytechnic Institute & State University | Martha J. Johnson, Director<br>Cooperative Education Program |
| Washington, University of | J. Christopher Holden, Central Coordinator<br>Cooperative Education Programs |
| Wayne State University | Marie Menezes, Assistant Director<br>Cooperative Education Program |
| West Virginia Institute of Technology | Carroll G. Carter, Director<br>Cooperative Education Program |
| Western Kentucky University | Patricia B. Brelsford, Acting Director<br>Office of Cooperative & Experiential Education |

APPENDIX B

INSTRUMENTS, 1978-79 CO-OP STUDY

LOG (Cooperative Education Placement Log). . . . . B1

STUDENT QUESTIONNAIRE. . . . . B4

SUPERVISOR'S EVALUATION. . . . . B12

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# COOPERATIVE EDUCATION PLACEMENT LOG

## Cover Sheet

Before you fill out the LOG, please complete the following information:

1. Sex: __ Male ___ Female

2. Job title and brief description: _____

_____

3. Indicate the date this LOG describes: _____

4. Overall, how typical was this day at work?

___ Not at all typical ___ Somewhat typical ___ Very typical

5. On the day for which the LOG was filled out,

(a) What time did you arrive at work? _____ a.m./p.m. (Circle one)

(b) What time did you leave work? _____ a.m./p.m. (Circle one)

6. Check to indicate if you want a copy of your LOG: ___ Yes ___ No

7. If you have any comments or suggestions to make about the LOG or the research, please use the back of this page.

## GENERAL INSTRUCTIONS

The LOG is in three sections: Where you were (Section 1); People you were with (Section 2); and What you did (Section 3). Each section asks for somewhat different information, so please read each set of instructions.

For the purpose of the LOG we are defining the TIME columns in the same way in each section. ALMOST ALL MY TIME means most of the day, more than three-quarters. Use that column for items that are most characteristic of your workday.

MOST OF MY TIME means more than one-half the day. Use this column for items that take up a good percentage of your time.

SOME OF MY TIME means less than half, about one-quarter or less of the total day's time. An "X" in this column indicates you did it fairly often.

VERY LITTLE TIME is the column to "X" if you spent a few minutes at it.

NONE OF MY TIME is self-explanatory.

SECTION 1: WHERE YOU WERE. In this section we listed several different places people can be during a day. Read through the list and put an "X" to show how much time you spent working at each location on LOG day — use one of the five columns labled WORKING TIME. Then, for each location (whether or not you worked there) indicate if you spent any time there resting or socializing. (Use the columns headed REST-SOCIAL.)

| | AMOUNT OF WORKING TIME | | | | | REST-SOCIAL | |
|---|---|---|---|---|---|---|---|
| | ALMOST ALL MY TIME | MOST OF MY TIME | SOME OF MY TIME | VERY LITTLE TIME | NONE OF MY TIME | YES | NO |
| Outdoors (garden, parking area, field, etc.) | | | | | | | |
| Traveling to other destinations (by foot, car, etc.) | | | | | | | |
| Walking (between rooms, offices, buildings, etc.) | | | | | | | |
| Stock room/store room/supply room | | | | | | | |
| Mail room | | | | | | | |
| Duplicating room/Xerox room | | | | | | | |
| Computer/keypunch room | | | | | | | |
| Classroom | | | | | | | |
| Laboratory | | | | | | | |
| Library | | | | | | | |
| Reception area/waiting room | | | | | | | |
| Selling floor | | | | | | | |
| General office/secretarial area | | | | | | | |
| Greenhouse | | | | | | | |
| Patient's hospital room | | | | | | | |
| Conference/meeting room | | | | | | | |
| Assembly line | | | | | | | |
| Your own office/station/desk | | | | | | | |
| Supervisor's office/station | | | | | | | |
| Private office (other than own or supervisor's) | | | | | | | |
| At post office, bank, UPS, etc. (on an errand) | | | | | | | |
| Cafeteria/restaurant/kitchen | | | | | | | |
| Employee lounge/restroom | | | | | | | |
| Other (specify): | | | | | | | |
| | | | | | | | |

SECTION 2: PEOPLE YOU WERE WITH. Below is a list of people that you might come into contact with during a typical day at work. Read through the list and put an "X" in one of the TIME columns to show how much time you spent working with this kind of person on LOG day. Then, for each kind of person, indicate whether or not you spent any time during the day speaking about non-work (personal, social, school) matters. Use the columns headed REST-SOCIAL.

| | AMOUNT OF WORKING TIME | | | | | REST-SOCIAL | |
|---|---|---|---|---|---|---|---|
| | ALMOST ALL MY TIME | MOST OF MY TIME | SOME OF MY TIME | VERY LITTLE TIME | NONE OF MY TIME | YES | NO |
| People in Your Department: | | | | | | | |
| Your immediate supervisor | | | | | | | |
| Workers with as much (or more) responsibility as your supervisor has | | | | | | | |
| Workers with more responsibility than you, but less than your supervisor | | | | | | | |
| Workers at about your level of responsibility | | | | | | | |
| Workers who you supervise | | | | | | | |
| Workers with less responsibility than you who you do not supervise | | | | | | | |
| People Not in Your Department: | | | | | | | |
| Workers with more responsibility than you have | | | | | | | |
| Workers at about your level of responsibility | | | | | | | |
| Workers with less responsibility than you have | | | | | | | |
| Others: | | | | | | | |
| Delivery people/repair people | | | | | | | |
| Sales people | | | | | | | |
| Customers/clients/patients/students | | | | | | | |
| Friends/family not employed at your organization | | | | | | | |
| NO ONE (you worked alone) | | | | | | | |
| Other (specify): | | | | | | | |
| | | | | | | | |

SECTION 3: WHAT YOU DID. Each of the activities on the list below are things that people do at work. Read the list and put an "X" in one of the TIME columns to indicate how much time you spent on LOG day in each of the activities. Then use the columns headed APPROPRIATE and put an "X" in the YES column next to every activity that you think is appropriate for someone with your job to be doing, whether or not you actually do that activity. (Check the NO column if you do NOT think the activity is appropriate.)

| | AMOUNT OF TIME | | | | | APPROPRIATE | |
|---|---|---|---|---|---|---|---|
| | ALMOST ALL MY TIME | MOST OF MY TIME | SOME OF MY TIME | VERY LITTLE TIME | NONE OF MY TIME | YES | NO |
| Shelving supplies | | | | | | | |
| Ordering supplies/taking inventory | | | | | | | |
| Filling out forms/keeping records | | | | | | | |
| On an errand for work | | | | | | | |
| On a personal errand | | | | | | | |
| Answering phones/taking messages | | | | | | | |
| Making phone calls for work | | | | | | | |
| Using phone for personal business | | | | | | | |
| Operating equipment (other than a typewriter) | | | | | | | |
| Repairing equipment | | | | | | | |
| Cleaning equipment/animals | | | | | | | |
| Feeding animals/patients | | | | | | | |
| Operating a computer | | | | | | | |
| Keypunching/verifying | | | | | | | |
| Typing for work | | | | | | | |
| Typing personal material | | | | | | | |
| Filing/copying numbers/checking | | | | | | | |
| Tabulating data (by hand or calculator) | | | | | | | |
| Duplicating/Xeroxing | | | | | | | |
| Delivering mail | | | | | | | |
| Stamping/stapling/pasting | | | | | | | |
| Proofreading | | | | | | | |
| Instructing other workers | | | | | | | |
| Instructing (or tutoring) patients/clients/students | | | | | | | |
| Supervising patients/clients/students | | | | | | | |
| Receiving instructions | | | | | | | |
| Having your work reviewed/corrected/checked | | | | | | | |
| Taking notes | | | | | | | |
| Attending meetings | | | | | | | |
| Dealing with customers/clients | | | | | | | |
| Writing work reports/letters | | | | | | | |
| Personal writing | | | | | | | |
| Collecting or sorting data/things | | | | | | | |
| Developing ideas | | | | | | | |
| Making decisions | | | | | | | |
| Lifting/carrying packages or equipment | | | | | | | |
| Working under extreme temperatures | | | | | | | |
| Working under hazardous conditions | | | | | | | |
| Making security checks/guarding | | | | | | | |
| Reading for work | | | | | | | |
| Reading personal material | | | | | | | |
| On a meal break | | | | | | | |
| On a rest break | | | | | | | |
| Waiting for instructions/machine time | | | | | | | |
| Getting lunch or coffee for co-workers | | | | | | | |
| Getting lunch or coffee for supervisors | | | | | | | |
| Other (specify):_____ | | | | | | | |
| _____ | | | | | | | |

COOPERATIVE EDUCATION PROJECT 1978-79, STUDENT QUESTIONNAIRE

THE FOLLOWING QUESTIONS ASK FOR BACKGROUND INFORMATION

1. Indicate your: *Sex* ☐ Male ☐ Female College *major*: _____

Have you *changed* your major in college? ☐ No ☐ Yes, if *yes*, from what? _____

2. What is your class standing?

☐ Freshman ☐ Sophomore ☐ Middler ☐ Junior ☐ Senior ☐ Graduate

*Excluding* this semester or quarter, what is your approximate grade point average?

☐ A+ ☐ A ☐ B+ ☐ B ☐ C+ ☐ C ☐ below C ☐ Other; specify: _____

3. Is this your *first* college co-op work assignment? ☐ Yes ☐ No, if *no*, how many co-op assignments have you had, *not* counting this one? ___ number prior co-op jobs.

4. What is the *highest* degree you plan to attain? ☐ Bachelors ☐ Masters

☐ Doctorate ☐ Professional (LL.D., M.D.) ☐ Other; specify: _____

5. Since the start of this school year, how much of a problem have the items below been to you?

| | Major problem | Some problem | No problem |
|---|---|---|---|
| What to major in | | | |
| What courses to select | | | |
| Other academic requirements | | | |
| Grades and study habits | | | |
| Personal problems | | | |
| Financing my education | | | |
| College rules and regulations | | | |
| Other; specify: _____ | | | |

THE FOLLOWING QUESTIONS ARE ABOUT YOUR CURRENT CO-OP WORK ASSIGNMENT

1. Check to indicate which of the following *best* describes the type of business or organization in which you work as a co-op student:

☐ Hospital/rehabilitation center/nursing home
☐ School/college/other educational institution
☐ Park/garden/farm/agricultural station
☐ Bank/insurance/stock broker
☐ Manufacturer/factory
☐ Oil company
☐ Accounting firm
☐ Law firm
☐ Laboratory: what type? _____

☐ Newspaper/publisher
☐ Library
☐ Research organization: what type? _____
☐ Restaurant/cafeteria
☐ Computer organization
☐ Retail store
☐ Police/law enforcement agency
☐ Other; specify: _____

2. To the best of your knowledge, is the organization you work for a:

☐ Federal governmental agency
☐ State governmental agency
☐ Municipal (city) governmental agency
☐ Non-governmental, but non-profit agency
☐ Private, profit-making agency
☐ Not certain

3. What is the title of your co-op position (job title)? _____

4. Indicate your *usual* daily work hours in a typical week. (Do *not* include overtime.) For example, "TIME START" on Monday might be indicated as 9:30 a.m.; "TIME QUIT" might read 5:50 p.m.

| | MON | TUE | WED | THUR | FRI | SAT | SUN |
|---|---|---|---|---|---|---|---|
| TIME START | | | | | | | |
| TIME QUIT | | | | | | | |

5. How often do you work *overtime*? ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

About how many hours per week do you work overtime? _____ hours per week.

If you *do* work overtime, are you compensated with:

☐ Pay ☐ Time off ☐ No compensation ☐ Other; specify: _____

6. In general, are your meal or rest breaks:

☐ Taken when you want ☐ Set by supervisor/organization ☐ Other; explain: _____

7. Is your direct supervisor: ☐ Male ☐ Female

If you *must* make a choice, all things considered, would you *prefer* to be supervised by a: ☐ Male ☐ Female

8. Using the last month as an example, how often was your work examined by your supervisor?

☐ About every day ☐ Once or twice a week ☐ Once or twice a month
☐ Not at all ☐ Other; explain: _____

9. Using last month as an example, how often did your supervisor give you new instructions or a new assignment to carry out?

☐ About every day ☐ Once or twice a week ☐ Once or twice a month
☐ Not at all ☐ Other; explain: _____

10. Whether you work on a farm, in a factory, office, hospital, or some other place, check whether *you* and *other workers like you* have each of the items on the list below.

| | Do *you* have *your* own...? | | Do *coworkers with jobs similar to yours* have *their own*...? | |
|---|---|---|---|---|
| | YES | NO | YES | NO |
| Desk | | | | |
| Room/station | | | | |
| Locker or storage space | | | | |
| Typewriter/tools | | | | |
| Keys (for rooms you use) | | | | |
| Telephone (your own extension) | | | | |
| Supplies | | | | |

11. The list below includes activities or situations workers engage in. Read the list twice.

(a) *First*, check whether or not you perform that activity on your job. Check YES if you do it *more than just once or twice* during the whole time of your employment. Check NO if you *never*, or *just once or twice* do it.

(b) *Second*, for each item on the list (*whether or not you answered* YES or NO) indicate how well you *perform or could perform* the activity.

| | (a) Do you perform the activity? | | (b) How do you (or *could* you) perform the activity? | |
|---|---|---|---|---|
| | YES | NO | Very Well | Not Very Well |
| Shelve supplies | | | | |
| Order supplies/take inventory | | | | |
| Fill out forms/keep records | | | | |
| Do errands for work | | | | |
| Do personal errands | | | | |
| Answer phones/take messages | | | | |
| Make phone calls for work | | | | |
| Use phone for personal business | | | | |
| Operate equipment (other than a typewriter) | | | | |
| Repair equipment | | | | |
| Clean equipment/animals | | | | |
| Feed animals/patients | | | | |
| Operate a computer | | | | |
| Keypunch/verify | | | | |
| Type for work | | | | |
| Type personal material | | | | |
| File/copy numbers/check | | | | |
| Tabulate data (by hand or calculator | | | | |
| Duplicate/Xerox | | | | |
| Deliver mail | | | | |
| Stamp/staple/paste | | | | |
| Proofread | | | | |
| Instruct other workers | | | | |
| Instruct (tutor) patients/clients/students | | | | |
| Supervise patients/clients/students | | | | |
| Receive instructions | | | | |
| Have your work reviewed/corrected/checked | | | | |
| Take notes | | | | |
| Attend meetings | | | | |
| Deal with customers/clients | | | | |
| Write work reports/letters | | | | |
| Personal writing | | | | |
| Collect or sort data/things | | | | |
| Develop ideas | | | | |
| Analyze data | | | | |
| Design instruments/techniques | | | | |
| Make decisions | | | | |
| Lift/carry packages or equipment | | | | |
| Work under extreme temperatures | | | | |
| Work under hazardous conditions | | | | |
| Make security checks/guard | | | | |
| Read for work | | | | |
| Read personal material | | | | |
| Take meal breaks | | | | |
| Take rest breaks | | | | |
| Wait for instructions/machine time | | | | |
| Get lunch or coffee for co-workers | | | | |
| Get lunch or coffee for supervisors | | | | |
| Work alone | | | | |
| Work with others | | | | |
| Socialize with co-workers at work | | | | |
| Socialize with supervisors at work | | | | |

12. To what extent do the people you work for *encourage you* to:

| | To a great extent | To some extent | To little or no extent |
|---|---|---|---|
| Ask questions about work-related matters | | | |
| Make independent decisions about work | | | |
| Offer your own opinions and suggestions | | | |
| Ask for advice about school | | | |
| Talk about your personal problems | | | |
| Ask advice about careers in general | | | |
| Ask about future employment in the company | | | |

13. In your opinion, compared to *other people doing work similar to what you do*, how much authority and responsibility do you have?

☐ More than average ☐ About average ☐ Less than average

14. How often do you perform activities that *you consider* to be:

| | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Boring or uninteresting | | | | |
| Challenging | | | | |
| Instructive | | | | |
| Beyond your abilities | | | | |
| Not appropriate to your sex | | | | |
| At too low a level for your job | | | | |

**THE FOLLOWING QUESTIONS ARE ABOUT WORK RULES AND POLICIES**

1. Compared to the average worker, *how well do you comply* with work rules and policies?

☐ Better than the average worker ☐ About the same as the average worker ☐ Less well than the average worker

2. If you did not comply with the rules and policies, compared to the average worker do you think you would get into:

☐ More trouble ☐ About the same amount of trouble ☐ Less trouble

3. Males answer Part A. Females answer Part B.

A. Are there any items of clothing you *should or are required to* wear to work? (Check all that apply.)

☐ Jeans ☐ Work/special shoes ☐ Smock, apron
☐ Slacks ☐ Sneakers ☐ Uniform
☐ Sport jacket ☐ Tie ☐ Other; specify: _____
☐ Suit ☐ Special hat/ hair covering ☐ Nothing special

B. Are there any items of clothing you *should or are required to* wear to work? (Check all that apply.)

☐ Dress/skirt ☐ Work/special shoes ☐ Uniform
☐ Slacks ☐ Stockings ☐ Other; specify: _____
☐ Slacks and jacket ☐ Special hat/hair covering ☐ Nothing special
☐ Jeans ☐ Smock, Apron

4. Go through the following list twice.

   a. *First*, indicate how tolerant you *think* your supervisor is *whether or not* you have a basis for knowing.

   b. *Second*, for each item, check whether your supervisor has ever spoken to you about the behavior.

| | a. I think my supervisor is... | | | b. Have you been spoken to? | |
|---|---|---|---|---|---|
| | Very Tolerant | Somewhat Tolerant | Not Tolerant | YES | NO |
| Being late for work | | | | | |
| Leaving work early | | | | | |
| Making personal phone calls | | | | | |
| Receiving personal phone calls | | | | | |
| Being absent from work regularly | | | | | |
| Socializing during work hours | | | | | |
| Smoking/eating in inappropriate areas | | | | | |
| Taking unassigned lunch breaks | | | | | |
| Taking unassigned rest breaks | | | | | |
| Doing school-related things at work | | | | | |
| Doing personal things at work | | | | | |
| Wearing improper attire | | | | | |

THE FOLLOWING QUESTIONS ARE ABOUT INTERPERSONAL RELATIONS AT WORK

1. Go through the list below two times.

   a. *First*, check how often at work your supervisor (and other people with more authority than you have) *do* the following things.

   b. *Second*, go through the list and check to show whether or not you *do or would* object when it is done.

| | Others do this... | | | Do you object? | |
|---|---|---|---|---|---|
| | Often | Sometimes | Never | YES | NO |
| Call you by your last name without Mr./Ms./Miss/Mrs. | | | | | |
| Call you by your last name with Mr./Ms./Miss/Mrs. | | | | | |
| Call you by your first name | | | | | |
| Call you by a nickname | | | | | |
| Call you by an endearing name | | | | | |
| Ask about your school experiences | | | | | |
| Ask about your personal life | | | | | |
| Include you in socializing with co-workers during work hours | | | | | |
| Include you in socializing with co-workers after work | | | | | |
| Ask you to do co-workers a favor | | | | | |
| Ask you to do supervisors a favor | | | | | |

2. Following is a list of personal qualities. Go through the list *three* times.

   (a) *First*, check each item to indicate how *you* think the quality *applies to you* as compared with the average person.

   (b) *Second*, check each item to indicate how you think *your work supervisor perceives you* as compared with the *average person.*

   (c) *Third*, check each item to show whether you *think* the quality is or is not *important* to the kind of work you do.

| | (a) Am I... | | | (b) Supervisor perceives me... | | | (c) Is important to my job? | |
|---|---|---|---|---|---|---|---|---|
| | More than Average | Average | Less than Average | More than Average | Average | Less than Average | YES | NO |
| Productive | | | | | | | | |
| Reliable, responsible | | | | | | | | |
| Considerate | | | | | | | | |
| Attractive | | | | | | | | |
| Talkative | | | | | | | | |
| Logical | | | | | | | | |
| Shy | | | | | | | | |
| Self-confident | | | | | | | | |
| Emotional | | | | | | | | |
| Ambitious | | | | | | | | |
| Competitive | | | | | | | | |
| Verbal | | | | | | | | |
| Gentle | | | | | | | | |
| Neat | | | | | | | | |
| Aggressive | | | | | | | | |
| Energetic | | | | | | | | |
| Efficient | | | | | | | | |
| Intelligent | | | | | | | | |
| Artistic | | | | | | | | |
| Curious | | | | | | | | |
| Sensitive | | | | | | | | |
| Intuitive | | | | | | | | |
| Tactful | | | | | | | | |
| Patient | | | | | | | | |
| Objective | | | | | | | | |
| Sociable | | | | | | | | |
| Fashionable | | | | | | | | |
| Strong | | | | | | | | |
| Creative; imaginative | | | | | | | | |
| Sympathetic | | | | | | | | |
| Temperamental | | | | | | | | |
| Open to criticism | | | | | | | | |
| Open to learning new things | | | | | | | | |
| Able to advance rapidly | | | | | | | | |
| Able to work well alone | | | | | | | | |
| Able to work well with others | | | | | | | | |
| Willing to do favors for co-workers | | | | | | | | |
| Willing to do favors for supervisors | | | | | | | | |
| Generous | | | | | | | | |
| Assertive | | | | | | | | |

**THESE LAST QUESTIONS ASK ABOUT THE GENERAL EFFECTS OF YOUR CO-OP ASSIGNMENT**

1. All other things being equal, after you complete *all schooling* what is your *first-choice* career? (Be as specific as possible.) _____

   Check to indicate how likely you think it is that you will *enter* that career:

   ☐ Very likely ☐ Somewhat likely ☐ Not very likely ☐ No chance

2. Twenty years from now, how *likely* do you think it will be that you will be working *full-time* at your *first-choice* career?

   ☐ Very likely ☐ Somewhat likely ☐ Not very likely ☐ No chance

   Twenty years from now, how likely do you think it will be that you will be working *full-time* at *any* career or job?

   ☐ Very likely ☐ Somewhat likely ☐ Not very likely ☐ No chance

3. From the list below, select *three* reasons that are *most important* to you in making a career choice. Please rank these in order of importance. (Put a 1 for the most important; a 2 for the next most important; and a 3 for the third most important on the line next to the item.)

   ☐ high salary
   ☐ opportunity to work with people
   ☐ opportunity for advancement
   ☐ opportunity to contribute to society
   ☐ opportunity to help others
   ☐ steady, secure work for the future
   ☐ pleasant surroundings, working conditions
   ☐ permits use of creativity
   ☐ permits use of own special skills, abilities
   ☐ freedom from supervision
   ☐ high prestige or status
   ☐ other; specify: _____

4. Did this co-op assignment help *clarify* your future career plans?

   ☐ Yes ☐ No; please explain: _____

5. Did this co-op assignment *meet* your expectations?

   ☐ Yes ☐ No; please explain: _____

6. How closely did this co-op assignment *match* the kind of job you wanted to try out?

   ☐ Very closely ☐ Somewhat closely ☐ Not at all

7. How much did you *enjoy* this co-op assignment?

   ☐ Very much ☐ Somewhat ☐ Little or not all

8. How *relevant* was this assignment to your major and future plans?

   ☐ Very relevant ☐ Somewhat relevant ☐ Not relevant

9. Rate how *useful* you found the co-op placement for each of the following:

| | Very Useful | Somewhat Useful | Not Useful |
|---|---|---|---|
| Providing general work experience | | | |
| Improving general work skills | | | |
| Learning about a specific career | | | |
| Improving specific career skills | | | |
| Learning about your strengths and weaknesses | | | |
| Making contacts for future employment | | | |
| Learning about the "real" world | | | |
| Learning how to work with others | | | |
| Teaching you to accept responsibility | | | |
| Applying your education to work | | | |
| Helping finance your college education | | | |
| Exploring/testing your career choice | | | |
| Learning about job opportunities | | | |
| Making you feel more independent | | | |

Use the rest of this space for any comments you want to make about your co-op assignment, about cooperative education in general, and/or about this research project.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE
INSERT IT IN THE STAMPED ENVELOPE AND
RETURN IT TO US AS SOON AS POSSIBLE

CENTER FOR ADVANCED STUDY IN EDUCATION
Graduate School and University Center of the City University of New York

CENTER FOR ADVANCED STUDY IN EDUCATION
Graduate School and University Center
City University of New York

2/79

COOPERATIVE EDUCATION PROJECT: SUPERVISOR'S EVALUATION

Below is a list of activities or tasks that the co-op student may have performed while working under your supervision, as well as actions related to organizational policy. Please rate the performance of the student named in the letter on each task. Ratings should be based on what you expect of the average full-time, regular employee with the same job title as the co-op student. Use "Not Applicable" if the student does not perform the activity.

| TASKS, ACTIVITIES: | Above Average | Average | Below Average | Not Applicable |
|---|---|---|---|---|
| Shelves supplies | | | | |
| Orders supplies/takes inventory | | | | |
| Fills out forms/keeps records | | | | |
| Does errands for work | | | | |
| Answers phones/takes messages | | | | |
| Operates a computer | | | | |
| Operates equipment (other than a typewriter) | | | | |
| Repairs equipment | | | | |
| Cleans equipment/animals | | | | |
| Feeds animals/patients | | | | |
| Makes phone calls for work | | | | |
| Keypunches/verifies | | | | |
| Types | | | | |
| Files/copies/checks | | | | |
| Tabulates data (by hand or calculator) | | | | |
| Duplicates/Xeroxes | | | | |
| Delivers mail | | | | |
| Stamps/staples/pastes | | | | |
| Proofreads | | | | |
| Instructs other workers | | | | |
| Instructs (tutors) patients/clients/students | | | | |
| Supervises patients/clients/students | | | | |
| Takes notes | | | | |
| Deals with customers/clients | | | | |
| Writes work reports/letters | | | | |
| Collects or sorts data/things | | | | |
| Develops ideas | | | | |
| Analyzes data | | | | |
| Designs instruments/techniques | | | | |
| Makes decisions | | | | |
| Lifts/carries packages or equipment | | | | |
| Works under extreme temperatures | | | | |
| Works under hazardous conditions | | | | |
| Makes security checks,guards | | | | |
| Reads for work | | | | |
| Works alone | | | | |
| Works with others | | | | |
| Understands or carries out instructions | | | | |
| Does necessary drudge work | | | | |
| Arrives at work on time | | | | |
| Leaves work on time | | | | |
| Maintains good attendance | | | | |
| Follows rules for telephone use | | | | |
| Follows rules for doing personal work during working hours | | | | |
| Follows rules about when (and where) to take rest breaks | | | | |
| Wears proper attire to work | | | | |

Please indicate to what degree, in your opinion, the student possesses each of the following personal qualities. Base your ratings on what you expect from the average full-time, regular employee with the same job title. Then, we would also like your opinion on whether each characteristic on the list is an asset or liability for a regular, full-time employee in the same job as the co-op student.

| PERSONAL QUALITIES: | Check one for each: The student is..? | | | Check one for each: For the job, the quality is..? | | |
|---|---|---|---|---|---|---|
| | Above Average | Average | Below Average | An Asset | A liability | Not Relevant |
| Productive | | | | | | |
| Reliable, responsible | | | | | | |
| Considerate | | | | | | |
| Attractive | | | | | | |
| Talkative | | | | | | |
| Logical | | | | | | |
| Shy | | | | | | |
| Self-Confident | | | | | | |
| Emotional | | | | | | |
| Ambitious | | | | | | |
| Competitive | | | | | | |
| Verbal | | | | | | |
| Gentle | | | | | | |
| Neat | | | | | | |
| Aggressive | | | | | | |
| Energetic | | | | | | |
| Efficient | | | | | | |
| Intelligent | | | | | | |
| Artistic | | | | | | |
| Curious | | | | | | |
| Sensitive | | | | | | |
| Intuitive | | | | | | |
| Tactful | | | | | | |
| Patient | | | | | | |
| Objective | | | | | | |
| Sociable | | | | | | |
| Fashionable | | | | | | |
| Strong | | | | | | |
| Creative, imaginative | | | | | | |
| Sympathetic | | | | | | |
| Temperamental | | | | | | |
| Open to criticism | | | | | | |
| Open to learning new things | | | | | | |
| Able to advance rapidly | | | | | | |
| Able to work well alone | | | | | | |
| Able to work well with others | | | | | | |
| Willing to do favors for co-workers | | | | | | |
| Willing to do favors for supervisors | | | | | | |
| Generous | | | | | | |
| Assertive | | | | | | |

The remaining questions are about your organization and responsibilities--data we need to put into perspective the information we have collected about the student.

How many employees are in the immediate unit/department/division in which the student is employed? _____ (total number of employees)

Please indicate: your job title: _____

your sex: ___Male ___Female

the number of people you supervise: _____

## APPENDIX C

## SUPPLEMENTARY DATA


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TABLE C1

SPECIFIC MAJORS INCLUDED IN EACH ANALYTIC GROUP

Female Dominated (FD) Majors
(% male in the general college population is 28% or less)

Pre-elementary education
Secretarial studies
Medical record librarianship
Nursing
Home economics
Elementary education
Education, general
Special education
Dance
Physical therapy
Soc. work & helping services
Interior design
Education, other

Neutral (NT) Majors
(% male in the general college population is 29% to 84%)

Fine arts, general
English
Nutrition science
Dramatic arts
Sociology
Applied design
Speech, debate, forensic science
Secondary education
Area studies
Photography
Psychology, general
Social sciences, general
Urban studies
Physical education
Mathematics
Philosophy
Communications
Botany
History
Interdisciplinary studies
Biology
Biochemistry
Ecology
Food science & technology
Industrial psychology
Political science & government

Male Dominated (MD) Majors
(% male in the general college population is 85% or more)

Physical science
Computer & information science
Economics
Law enforcement & corrections
Natural resources management
Horticulture
Public administration
Animal science
Plant science
Architecture
Agriculture, general
Fish, game, & wild life management
Business (all types--see list at right)
Forestry
Engineering (all types--see list at right)
Agronomy

Engineering (EGR ) Majors
(% male in the general college population is 94% to 99%)

Bioegr & biomedical egr
Materials egr
Environmental & sanitary egr
Nuclear egr
Chemical egr
Egr , general
Egr technology
Egr physics
Mining & minerals egr
Metallurgic egr
Industrial & management egr
Mechanical egr
Electrical egr
Civil egr
Agricultural egr
Aerospace egr

Business (BUS ) Majors
(% male in the general college population is 90% to 97%)

Business, other
Accounting
Bus. & Commerce, general
Marketing & purchasing
Hotel & restaurant management
Bus statistics
International bus
Bus management & administration
Bus economics
Labor & industrial relations
Insurance
Banking & finance

TABLE C2

DISCREPANCY BETWEEN CO-WORKERS' AND STUDENTS' EQUIPMENT
(AS REPORTED BY STUDENTS; DERIVED FROM TABLE 7)

| EQUIPMENT: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS. |
| Supplies | M | +2 | 0 | -2 | +3 | +3 | +4 |
| | F | +1 | +3 | -0 | +1 | +4 | -1 |
| Desk | M | +6 | 0 | +9 | +5 | +7 | +3 |
| | F | +4 | +4 | +3 | +4 | +4 | +5 |
| Room/station | M | +2 | 0 | -2 | +3 | +2 | +3 |
| | F | +2 | -1 | -1 | +2 | -5 | +6 |
| Telephone | M | +9 | 0 | +10 | +9 | +11 | +1 |
| | F | +7 | +7 | +9 | +8 | +4 | +14 |
| Typewriter/ tools | M | +12 | 0 | +10 | +11 | +13 | +10 |
| | F | +9 | +8 | +16 | +8 | +8 | +18 |
| Locker/storage space | M | +6 | +11 | +4 | +6 | +5 | +2 |
| | F | +6 | +9 | +6 | +5 | +4 | +1 |
| Keys | M | +13 | +22 | +7 | +13 | +15 | +15 |
| | F | +12 | +6 | +16 | +13 | +8 | +13 |

NOTE: Each entry in this table is the difference between the two corresponding percentages shown in the right and left halves of Table 7 in the text (i.e., for each group: % of co-workers students say have the item, minus % of students who have the item). A plus sign means the students say their co-workers have more of the item than they do.

TABLE C3

ACTIVITIES: STUDENTS' VIEWS OF THE APPROPRIATENESS OF TASKS THEY PERFORMED
(PERCENTAGE RATING EACH TASK AS APPROPRIATE TO THEIR JOB)

| SET A: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Fill out forms, keep records | M | 95% | 90% | 94% | 96% | 95% | 99% |
| | F | 97 | 96 | 93 | 99 | 100 | 98 |
| | M-F | -2 | -6 | +1 | -3 | -5 | +1 |
| Answer phones, take messages | M | 86 | 80 | 91 | 86 | 88 | 89 |
| | F | 94 | 93 | 95 | 95 | 100 | 92 |
| | M-F | -8* | -13 | -4 | -9* | -12 | -3 |
| File, copy numbers, check | M | 89 | (100) | 89 | 89 | 81 | 96 |
| | F | 90 | 97 | 86 | 89 | 87 | 89 |
| | M-F | -1 | +3 | +3 | -0 | -6 | +7 |
| Duplicate, Xerox | M | 90 | 83 | 95 | 89 | 89 | 95 |
| | F | 88 | 93 | 89 | 87 | 94 | 89 |
| | M-F | +2 | -10 | +6 | +2 | -5 | +6 |
| Do errands for work | M | 85 | 67 | 92 | 84 | 93 | 76 |
| | F | 89 | 90 | 90 | 87 | 93 | 84 |
| | M-F | -4 | -23 | +2 | -3 | -0 | -8 |
| Lift or carry things | M | 80 | 100 | 90 | 77 | 91 | 76 |
| | F | 86 | 86 | 87 | 88 | 100 | 81 |
| | M-F | -6 | +14 | +3 | -11 | -19 | -5 |
| Stamp, staple, paste | M | 83 | (67) | 83 | 83 | 85 | 84 |
| | F | 87 | 96 | 83 | 84 | 89 | 86 |
| | M-F | -4 | -29 | +0 | -1 | -4 | -2 |
| Shelve supplies | M | 78 | (100) | 100 | 73 | 87 | 65 |
| | F | 82 | 82 | 88 | 82 | (75) | 90 |
| | M-F | -4 | +18 | +12 | -9 | +12 | -25 |
| Clean equipment or animals | M | 89 | (100) | 92 | 87 | 88 | 75 |
| | F | 93 | 88 | 93 | 100 | 100 | (100) |
| | M-F | -4 | +12 | -1 | -13 | -12 | -25 |
| Deliver mail | M | 75 | (100) | 92 | 69 | 70 | 68 |
| | F | 80 | 92 | 83 | 70 | (100) | 73 |
| | M-F | -5 | +8 | +9 | -1 | -30 | -5 |
| Feed patients or animals | M | 67 | (100) | (50) | (67) | -- | -- |
| | F | 96 | 100 | 100 | (100) | -- | -- |
| | M-F | -29Δ | [NA] | -50 | -33 | [NA] | [NA] |

| SET B: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Collect or sort data or things | M | 95% | 100% | 96% | 95% | 97% | 97% |
| | F | 94 | 93 | 91 | 95 | 95 | 94 |
| | M-F | +1 | +7 | +5 | +0 | +2 | +3 |
| Operate eqpmt. other than typewriter | M | 97 | 100 | 100 | 96 | 98 | 95 |
| | F | 97 | 100 | 94 | 97 | 100 | 94 |
| | M-F | -0 | [NA] | +6 | -1 | -2 | +1 |
| Tabulate data (by hand or calculator) | M | 97 | (100) | 88 | 98 | 99 | 100 |
| | F | 93 | 100 | 85 | 94 | 100 | 90 |
| | M-F | +4 | [NA] | +3 | +4 | -1 | +10* |
| Make phone calls for work | M | 98 | 100 | 100 | 98 | 100 | 98 |
| | F | 91 | 91 | 90 | 92 | 94 | 93 |
| | M-F | +7** | +9 | +10 | +6* | +6 | +5 |
| Take notes | M | 95 | 100 | 96 | 95 | 91 | 100 |
| | F | 95 | 97 | 93 | 94 | 92 | 96 |
| | M-F | +0 | +3 | +3 | +1 | -1 | +4 |
| Proofread | M | 94 | (100) | 100 | 93 | 90 | 96 |
| | F | 93 | 95 | 86 | 95 | 100 | 93 |
| | M-F | +1 | +5 | +14 | -2 | -10 | +3 |
| Type for work | M | 82 | (50) | 92 | 80 | 62 | 90 |
| | F | 88 | 100 | 81 | 86 | (100) | 91 |
| | M-F | -6 | -50^ | +11 | -6 | -38 | -1 |
| Keypunch, verify | M | 93 | -- | (100) | 93 | 97 | 97 |
| | F | 95 | 100 | 100 | 92 | (100) | 87 |
| | M-F | -2 | [NA] | [NA] | +1 | -3* | +10 |
| Make security checks, guard | M | 94 | (100) | 100 | 93 | 100 | 93 |
| | F | 93 | 100 | (100) | 89 | (75) | 89 |
| | M-F | +1 | [NA] | [NA] | +4 | +25 | +4 |
| Attend meetings | M | 94 | 100 | 95 | 93 | 94 | 93 |
| | F | 93 | 94 | 89 | 96 | 100 | 93 |
| | M-F | +1 | +6 | +6 | -3 | -6 | +0 |

TABLE C3 (continued)

| SET C: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Make decisions | M | 95% | 100% | 97% | 95% | 98% | 95% |
| | F | 95 | 96 | 94 | 95 | 92 | 96 |
| | M-F | +0 | +4 | +3 | -0 | +6 | -1 |
| Read for work | M | 97 | 100 | 97 | 96 | 99 | 98 |
| | F | 95 | 95 | 93 | 96 | 100 | 95 |
| | M-F | +2 | +5 | +4 | +0 | -1 | +3 |
| Develop ideas | M | 96 | 80 | 100 | 95 | 99 | 95 |
| | F | 99 | 100 | 98 | 99 | 95 | 100 |
| | M-F | -3 | -20 | +2 | -4 | +4 | -5 |
| Write work reports or letters | M | 96 | (100) | 96 | 96 | 100 | 95 |
| | F | 97 | 96 | 97 | 97 | 91 | 98 |
| | M-F | -1 | +4 | -1 | -1 | +9 | -3 |
| Deal with customers or clients | M | 93 | (100) | 96 | 91 | 96 | 93 |
| | F | 97 | 97 | 97 | 96 | (100) | 94 |
| | M-F | -4 | +3Δ | -1 | -5 | -4 | -1 |
| Instruct other workers | M | 91 | 100 | 94 | 90 | 96 | 91 |
| | F | 95 | 92 | 100 | 94 | 100 | 92 |
| | M-F | -4 | +8 | -6 | -4 | -4 | -1 |
| Operate a computer | M | 95 | -- | (100) | 95 | 96 | 100 |
| | F | 94 | 100 | 71 | 97 | 100 | 94 |
| | M-F | +1 | [NA] | +29 | -2 | -4 | +6 |
| Order supplies, take inventory | M | 90 | (100) | 100 | 88 | 94 | 86 |
| | F | 93 | 91 | 92 | 96 | 100 | 93 |
| | M-F | -3 | +9 | +8 | -8 | -6 | -7 |
| Instruct or tutor Pts., clients, Ss | M | 92 | 83 | 93 | 94 | 86 | 100 |
| | F | 95 | 98 | 95 | 89 | -- | 100 |
| | M-F | -3 | -15 | -2 | +5 | [NA] | [NA] |
| Instruct or tutor clients, pats. | M | 90 | 100 | 93 | 84 | 100 | 86 |
| | F | 97 | 100 | 95 | 91 | -- | 100 |
| | M-F | -7 | [NA] | -2 | -7 | [NA] | -14 |
| Repair equipment | M | 81 | (100) | 80 | 82 | 97 | 53 |
| | F | 75 | 50 | 86 | 81 | 100 | 75 |
| | M-F | +6 | +50 | -6 | +1 | -3 | -22 |

| SET D: | | Student Group ALL | FD | NT | MD | EGR | BUS |
|---|---|---|---|---|---|---|---|
| Receive instructions | M | 97% | 100% | 100% | 96% | 97% | 100% |
| | F | 97 | 96 | 96 | 98 | 100 | 95 |
| | M-F | 0 | +4 | +4 | -2 | -3 | +5 |
| Have work reviewed, checked, corrected | M | 96 | 100 | 97 | 96 | 97 | 97 |
| | F | 96 | 98 | 93 | 96 | 100 | 92 |
| | M-F | +0 | +2 | +4 | -0 | -3 | +5 |
| Wait for instructions or machine time | M | 86 | (100) | 88 | 86 | 82 | 88 |
| | F | 86 | 89 | 86 | 86 | 74 | 89 |
| | M-F | -0 | +11 | +2 | -0 | +8 | -1 |
| Take meal breaks | M | 96 | 100 | 100 | 96 | 98 | 98 |
| | F | 99 | 100 | 100 | 98 | 100 | 96 |
| | M-F | -3Δ | [NA] | [NA] | -2 | -2 | +2 |
| Take rest breaks | M | 95 | 100 | 97 | 95 | 94 | 97 |
| | F | 97 | 100 | 98 | 96 | 96 | 93 |
| | M-F | -2 | [NA] | -1 | -1 | -2 | +4 |
| Get lunch or coffee for coworkers | M | 84 | -- | 82 | 84 | 80 | 86 |
| | F | 75 | 94 | 80 | 55 | (50) | 67 |
| | M-F | +9 | [NA] | +2 | +29* | +30 | +19 |
| Get lunch or coffee for supervisors | M | 78 | -- | 67 | 79 | (100) | 77 |
| | F | 70 | 100 | 56 | 59 | (33) | 89 |
| | M-F | +8 | [NA] | +11 | +20 | +67 | -12 |
| Work under extreme temperatures | M | 62 | -- | 70 | 60 | 81 | 12 |
| | F | 48 | 62 | 44 | 39 | (25) | 50 |
| | M-F | +14 | [NA] | +26 | +21 | +56Δ | -38 |
| Work under hazardous conditions | M | 77 | -- | 67 | 78 | 90 | 29 |
| | F | 56 | 43 | 50 | 69 | 62 | (67) |
| | M-F | +21Δ | [NA] | +17 | +9 | +28 | -38 |

-04-

TABLE C4

PERCENTAGE OF STUDENTS ASSIGNING FIRST-RANK IMPORTANCE TO EACH OF 14 FACTORS INVOLVED IN MAKING A CAREER CHOICE

| FACTORS: | | Student Group | | | | | |
|---|---|---|---|---|---|---|---|
| | | ALL | FD | NT | MD | EGR | BUS |
| Use of own special skills & abilities | M | 19 | 0 | 34 | 18 | 23 | 12 |
| | F | 22 | 11 | 28 | 26 | 29 | 19 |
| | M-F | -3 | -11 | +6 | -8 | -6 | -7 |
| High salary | M | 9 | 0 | 8 | 10 | 9 | 14 |
| | F | 8 | 8 | 2 | 10 | 13 | 14 |
| | M-F | +1 | -8 | +6 | 0 | -4 | 0 |
| Steady secure work for the future | M | 18 | 11 | 3 | 20 | 19 | 18 |
| | F | 8 | 6 | 5 | 11 | 21 | 14 |
| | M-F | +10 | +5 | -2 | +9 | -2 | +4 |
| Opportunity for advancement | M | 11 | 0 | 8 | 11 | 10 | 19 |
| | F | 6 | 2 | 2 | 11 | 4 | 19 |
| | M-F | +5 | -2 | +6 | 0 | +6 | 0 |
| Pleasant working conditions | M | 10 | 11 | 9 | 10 | 9 | 9 |
| | F | 9 | 6 | 11 | 9 | 0 | 8 |
| | M-F | +1 | +5 | -2 | +1 | +9 | +1 |
| Opportunity to help others | M | 6 | 11 | 20 | 4 | 1 | 4 |
| | F | 19 | 46 | 16 | 4 | 4 | 2 |
| | M-F | -13 | -35 | +4 | 0 | -3 | +2 |
| Opportunity to work with people | M | 5 | 44 | 3 | 4 | 2 | 8 |
| | F | 7 | 9 | 2 | 7 | 4 | 8 |
| | M-F | -2 | +35 | +1 | -3 | -2 | 0 |
| Opportunity to contribute to society | M | 3 | 11 | 0 | 4 | 3 | 3 |
| | F | 8 | 5 | 17 | 6 | 0 | 4 |
| | M-F | -5 | +6 | -17 | -2 | +3 | -1 |
| Permits use of creativity | M | 6 | 0 | 6 | 6 | 8 | 2 |
| | F | 5 | 1 | 9 | 5 | 13 | 2 |
| | M-F | +1 | -1 | -3 | +1 | -5 | 0 |
| High prestige or status | M | 3 | 0 | 0 | 3 | 2 | 3 |
| | F | 1 | 0 | 0 | 1 | 0 | 2 |
| | M-F | +2 | 0 | 0 | +2 | +2 | +1 |
| Freedom from supervision | M | 1 | 0 | 0 | 1 | 0 | 1 |
| | F | 3 | 3 | 2 | 3 | 0 | 4 |
| | M-F | -2 | -3 | -2 | -2 | 0 | -3 |
| Other-Enjoyable | M | 3 | 11 | 3 | 3 | 5 | 1 |
| | F | 3 | 3 | 2 | 3 | 8 | 4 |
| | M-F | 0 | +8 | +1 | 0 | -3 | -3 |
| Other-Challenging, interesting | M | 2 | 0 | 3 | 2 | 3 | 0 |
| | F | 1 | 0 | 0 | 3 | 4 | 0 |
| | M-F | +1 | 0 | +3 | -1 | -1 | 0 |
| Specified Other | M | 3 | 0 | 3 | 3 | 3 | 1 |
| | F | 0 | 0 | 0 | 0 | 0 | 0 |
| | M-F | +3 | 0 | +3 | +3 | +3 | +1 |

TABLE C5

RANK ORDER OF THE 14 CAREER CHOICE FACTORS
WITHIN EACH GROUP

| FACTORS: | All | | FD | | NT | | MD | | EGR | | BUS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F | M | F | M | F |
| Use of own special skills and abilities | 3 | 1 | 8.0 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 4 | 2 |
| High salary | 1 | 4 | 5.5 | 5 | 3 | 7 | 1 | 3 | 2 | 5 | 1 | 1 |
| Steady, secure work for the future | 2 | 6 | 3.5 | 4 | 6 | 8 | 2 | 4 | 3 | 2 | 3 | 4 |
| Opportunity for advancement | 4 | 7 | 3.5 | 8 | 7 | 9 | 4 | 2 | 4 | 3 | 2 | 3 |
| Pleasant working conditions | 5 | 5 | 5.5 | 6 | 8 | 4 | 5 | 5 | 5 | 8 | 5 | 6 |
| Opportunity to help others | 8 | 2 | 2 | 1 | 2 | 2 | 9 | 9 | 13 | 9 | 9 | 11 |
| Opportunity to work with people | 9 | 3 | 1 | 3 | 9 | 6 | 8 | 6 | 9 | 7 | 6 | 5 |
| Opportunity to contribute to society | 7 | 8 | 8.0 | 7 | 5 | 3 | 7 | 7 | 7 | 6 | 8 | 9 |
| Permits use of creativity | 6 | 9 | 12.5 | 9 | 4 | 5 | 6 | 8 | 6 | 4 | 10 | 7 |
| High prestige or status | 10 | 12 | 12.5 | 12 | 14 | 12 | 10 | 10 | 10 | 13 | 7 | 8 |
| Freedom from supervision | 13 | 10 | 10 | 10 | 10 | 10 | 13 | 11 | 14 | 14 | 12 | 10 |
| Other-Enjoyable | 11 | 11 | 8.0 | 11 | 12.0 | 11 | 12 | 12 | 8 | 10 | 13 | 12 |
| Other-Challenging, interesting | 14 | 13 | 12.5 | 13.5 | 12.0 | 14 | 14 | 13 | 12 | 11 | 14 | 13.5 |
| Specified Other | 12 | 14 | 12.5 | 13.5 | 12.0 | 13 | 11 | 14 | 11 | 12 | 11 | 13.5 |